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River Crossings

NATIONAL RIVER SURVEY

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Number 1

New Telephone Number

Please note that MICRA's telephone number has changed to (309) 793-5811. Our FAX number is (309) 793-5812, and we can be reached by email at IJRIVERS@AOL.COM.

Sturgeon and Paddlefish Listing Update

As noted in the last issue of *River Crossings* (Vol. 6, No. 6) all sturgeon and paddlefish, and their products are now listed in Appendix II of the *Convention on International Trade in Endangered Species of Wild Fauna and Flora* (CITES). This listing decision, reached at the Tenth Conference of the CITES Parties (COP10) in June, becomes effective April 1.

CITES is an international treaty designed to control the international trade in certain animal and plant species which are or may become threatened with extinction, and are listed in Appendices to CITES. Currently, 143 countries, including the U.S., are CITES Parties. The U.S. Fish and Wildlife Service (USFWS) is the lead agency for U.S. implementation of CITES. With the recent listing, all paddlefish and sturgeon products are now covered by USFWS regulations regarding import or export of wildlife.

Sturgeons are fished for meat and caviar, with caviar being the most

valuable product and in highest international demand. As noted in previous issues of "River Crossings", many species of sturgeons, the primary source of commercial caviar, have experienced severe population declines worldwide because of both habitat destruction and excessive take for international trade. Some are at serious risk of extinction.

The order, *Acipenseriformes* (to which the sturgeon and paddlefish belong), are a primitive group of approximately 27 species of fish, whose biological attributes make them vulnerable to intensive fishing pressure or other agents of elevated adult mortality. Although females produce large quantities of eggs, juvenile mortality is high; sturgeons are generally long-lived and slow to mature (reaching sexual

maturity at 6-25 years); and depend on large rivers to spawn.

Sturgeons of the Caspian Sea produce what is claimed to be the highest quality caviar and are the source of more than 90% of the world caviar trade. Russia, Kazakhstan, Azerbaijan, Turkmenistan, and Iran now supply most of the caviar from the Caspian Sea. Since the mid-1970's very marked declines in the populations of all six Caspian Sea sturgeon species have been noted, especially beluga (*Huso huso*), Russian (*Acipenser gueldenstaedtii*), and stellate (*A. stellatus*) sturgeons. Five of the six species of Caspian Sea sturgeons are considered endangered by the IUCN (the World Conservation Union).

This problem has become exacerbated in recent years due to deteriorating

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fishery management and enforcement capabilities in the region, resulting in significant levels of poaching and illegal trade. The total present take is believed to far exceed sustainable levels. These concerns led to development of the CITES listing proposal (co-sponsored by Germany and the U.S.) to include all presently unlisted sturgeon species. The proposal was adopted by consensus of the other members.

Prior to COP10, shortnose sturgeon (*A. brevirostrum*) and Baltic sturgeon (*A. sturio*) were listed in CITES Appendix I and Atlantic sturgeon (*A. oxyrinchus*) and American paddlefish (*Polyodon spathula*) were listed in CITES Appendix II. Five of the newly listed species were listed in Appendix II because of their population status and trade levels: beluga, Russian, stellate, Siberian (*A. baerii*), and ship or spiny (*A. nudiventris*) sturgeons. All other species of sturgeons not already listed in CITES before COP10 were included in Appendix II because of the "similarity of appearance of their caviar to that of the Caspian Sea species". This includes the white sturgeon (*A. transmontanus*) from North America.

The end result of this is that all sturgeon and paddlefish species worldwide, are now covered under the provisions of CITES. It is hoped that this measure will provide a regulatory mechanism for the import and export of sturgeon and their products, thereby curtailing illegal caviar trade and the detriment to wild populations, notably those of the Caspian Sea. Under the listing, all sturgeon species, their parts and products, including meat and caviar, will now have to be declared to the USFWS upon import or export, as well as meet applicable permit, port and licensing requirements.

Prior to the 4/1 implementation of the CITES listing, the USFWS held two public meetings, one in New York (1/17) and one in Los Angeles (1/27) to discuss its implications. These meetings provided opportunities for importers and exporters of sturgeon and their products, notably caviar, Customs brokers and other interested persons to meet with USFWS officials. The meetings were held in

New York and Los Angeles because of the high volume of caviar imports through these ports, and the corresponding concentration of affected members of the general public.

The USFWS has prepared a fact sheet, "Sturgeons and CITES" to help answer questions on the listing and its implementation. Proposed rules for implementation of the CITES regulations were published in the Federal Register, 12/5/97, Vol. 62, No. 234, pp. 64347-64348.

Meanwhile, the Germany-based power company *RWE Energie* hopes to market its own brand of home-grown caviar by raising sturgeon in the shadow of one of its coal-fired power plants near Cologne. *RWE's* Friedhelm Guenter said that the warm waters of the plant's reservoirs were thought to be helping the nearly 60 fish grow bigger and more quickly than normal. The company hopes to begin breeding

the fish in 1999 and introducing them into inland waterways.

Sources: USFWS News Release and *Long Island Newsday*, 1/15/97. USFWS contact: Dr. Rosemarie Gnam, Office of Management Authority, 4401 N. Fairfax Drive, Rm. 700, Arlington VA 22203, (703) 358-2095 or fax (703) 358-2298

Pallid Sturgeon Recovery - a Step Closer

The *Pallid Sturgeon Recovery Program* is a small, but significant, step closer to achieving recovery objectives after the crew at the Gavins Point National Fish Hatchery (NFH), Yankton, SD, successfully spawned two females and three males on 6/16-18/97. These five fish were captured from the Missouri and Yellowstone rivers in ND under direction and guidance of the Missouri River Fish and Wildlife Management Assistance

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Office (MRFWMAO), Bismarck, ND. The successful event produced nearly 300,000 green eggs, with 75,000 of those being shipped to facilities throughout the country to accomplish research regarding genetics, taxonomy, environmental contaminants, habitat selection and behavior. Approximately 5,000 juveniles were retained for population augmentation, broodstock development, other research needs, and outreach.



Fish and wildlife agency official with large pallid sturgeon collected from the upper Missouri River.

The five sturgeons spawned this year have an interesting history. Two of the three males (41 and 37 lbs.) were captured in ND in 9/93 by MRFWMAO staff. They were transported approximately 500 miles to the Gavins Point NFH to be held as broodstock. The other male (26 lbs.) and the two females (55 and 50 lbs.) were captured by biologists in the fall of 1996. These fish were temporarily held at the Garrison Dam NFH before being relocated to the Gavins Point NFH when netting operations ended for the year. While at Garrison Dam NFH, the 55-pound female contracted a fungal infection on her abdomen. She had to be treated and recover before being transported. She did not heal sufficiently to travel the long distance until 1/6/97, when the Dakotas were in the heart of a record cold winter. Ice was forming on the large round tank where she

was being held at the Garrison Dam NFH in the unheated building. Despite her troublesome adventure, she was the best producing female.

The juvenile pallid sturgeons are being cultured as separate family lots to maximize genetic diversity. Recovery plans call for spawning and population augmentation in each of the next 6 years. Starting in 1998, approximately 1,500 juveniles will be released back to the wild in the upper basin. Even with this year's success, population augmentation is just one ingredient in the recipe of recovery. Species protection and habitat restoration will continue to achieve equal attention on other fronts.

Prior to this year's success at Gavins Point NFH, Jerry Hamilton, Missouri Dept. of Conservation, Blind Pony State Fish Hatchery (Sweet Springs) pioneered pallid sturgeon spawning. Hamilton began spawning "wild" lower Missouri River and Middle Mississippi River pallid sturgeon in 1994. Hamilton's fish have been collected as "by-catch" from commercial fishermen. The upper Missouri River fish spawned at Gavins Point this year are thought to be a different strain than those present on the lower river because they seem to reach larger adult size.

Source: *Pallid Sturgeon Recovery Update*, 11/97, Issue No. 9. Contact: Mark Dryer, Missouri River FAO, Bismarck, ND, (701) 250-4419 or Herb Bollig, Gavins Point NFH, Yankton, SD, (605) 665-3352

Natural Variability Key to River Restoration

Managing a river to maintain minimum water flow or sustain a single "important species" is like teaching pet tricks to a wolf: The animal may perform, but it's not much of a wolf anymore. That is the conclusion of a six-university panel of river experts whose report, *"The Natural Flow Regime: A Paradigm for River Conservation and Restoration,"* is published in the 12/97 issue of *BioScience* (Vol. 47, pp. 769-784).

Letting a river do its own thing -- come drought or high water -- is more complicated than anyone realized until

recently, the panel agrees, but at least scientists now know why natural flow is important and how to help. "People say you can never return the Ohio River to its natural state, and you can't -- without displacing a lot of people," said Mark B. Bain, a fish ecologist at Cornell University and one of eight authors of the *BioScience* report. "But you can enhance different portions of the Ohio's flow regime, by changes to dams and water-use operations, for example, and return some of the ecological integrity with relatively minor changes," he said.

"It is now clear that natural river systems can and should be allowed to repair and maintain themselves," said N. LeRoy Poff, a biologist at Colorado State University. "Every river system is different, and each will take a different mix of human-aided and natural recovery methods. But the key to management of healthy river ecosystems has to revolve around restoring their natural dynamic character."

The river system study was funded by a grant from the George Gund Foundation, with logistical support from The Nature Conservancy. Participating in the study were Bain, an associate professor of natural resources at Cornell; Poff, an assistant professor of biology, Colorado State; J. David Allan, professor of natural resources, University of Michigan; James R. Karr, professor in the departments of fisheries and zoology, University of Washington; Karen L. Prestegaard, associate professor of geology, University of Maryland; Brian D. Richter, hydrologist for The Nature Conservancy; Richard E. Sparks, director of river research, Illinois Natural History Survey; and Julie C. Stromberg, associate professor of plant biology, Arizona State University.

The scientists said there's more to natural flow than tolerating the occasional "100-year flood" or creating human-made floods. They identified five often overlooked components of a river's flow regime:

- magnitude,
- frequency,
- duration,
- timing and
- rate of change,

saying: "Modification of flow has cascading effects on the ecological integrity of rivers."

Cornell ecologist Bain cited five examples of American rivers that still run free, and four that could with a little help:

- Cahaba River (AL): "Undammed, with no major water withdrawals, this is one of the country's most species-diverse rivers."
- Yampa (CO) and Little Colorado (AZ): "The last rivers supporting the largely exterminated fishes of the Colorado River system."
- Hudson River (NY/NJ): "A lot of diversity for a river that flows through the most densely populated region in the U.S." Because the lower Hudson never had controlled flows, Bain said, the river remains a stronghold for many Atlantic Coast migratory fishes.
- French Creek (river-sized system in NY and PA): "Retaining its record-high diversity of fish and mussels, this large stream holds species that used to be in the Allegheny River prior to dams."
- Mohawk River (NY): "Dammed, channelized and almost entirely controlled, the Mohawk River is now dominated by hearty, non-native species and recreational boats."
- Columbia River (WA/OR): "Despite intense public interest, a major salmon industry and hundreds of millions of dollars annually devoted to mitigation, restoring the river's famous fish runs hasn't worked."
- Colorado River (AZ/UT/CO): "The original fish fauna have disappeared and many other organisms in the native community are nearly extinct." However, all the human demands for the Colorado's water probably preclude major changes in river management, Bain said, adding: "Fortunately, Grand Canyon looks fine without water; it's a good thing it's supposed to be arid."
- Kissimmee River (FL): "By dismantling flood-control dams and connecting with swamps and wetlands, the largest ecosystem restoration effort in U.S. history will return this river to its winding, swampy path and greatly increase water quality."

The river scientists said they hoped the report -- by presenting state-of-the-art knowledge about the importance of natural variability to aquatic and riparian ecosystems -- will help

river managers and agencies make the argument that unfettered rivers have multiple benefits for nature and for human society. The authors made the following major summary points about the *"The Natural Flow Regime"*:

- River ecosystems are damaged and degraded due to multiple human actions. Changes to the natural flow regime constitute one particularly important and underappreciated cause of declining health of rivers.
- Natural variability characterizes all ecosystems. Variability in river flow is a prime example of such natural variability. Each river has a natural flow regime, which can be altered by a variety of human actions including dams, diversions and diverse ways in which hydrologic pathways are al-

river ecosystems. Examples include not just salmon migrations but recruitment of riparian trees, maintenance of sandbars in river channels, and sustenance of wetland habitat dependent upon flood plain inundation.

- Scientific knowledge allows us to characterize the natural flow regime of a river and determine the extent to which it has been altered. Our understanding of the linkages between natural flow regime and the ecological functioning of rivers provides a powerful scientific basis for river management and restoration.
- Current river management too often fails to consider the importance of natural variability. The standard practice of managing for one or a few "important" or imperiled species by defin-



Natural variability in aquatic (i.e. channel, sand bar, and gravel) and riparian habitats created by the upper Allegheny River during the 100-year flood of 1979.

tered.

- Natural variability in river flow creates a wide range of habitat types and ecosystem processes that maintain the natural biological diversity of aquatic and riparian (stream side) species. A major consequence of this natural variability is that all species experience favorable conditions at some time, preventing any one species from dominating.
- Alterations of the natural flow regime result in numerous physical, chemical and biological changes to

ing how little water can be left in the river is not adequate based on new scientific understanding. Some examples of restoring the natural flow regime (e.g. Glen Canyon) provide encouragement that the adaptive management approaches can be used to manage for whole river ecosystems.

Source: *Ecological Society of America* On-line News Release, 12/4/97; Contact: Roger Segelken, (607) 255-9736, E-Mail: hrs2@cornell.edu

Dam Modifications/Removals

The U.S. Army Corps of Engineers (Corps) is recommending that it "go ahead" and blast a notch in OR's Elk Creek Dam to allow spawning salmon free access upstream, rather than wait on a proposed environmental impact statement. The \$7 million cost to blast the notch would be cheaper "and more biologically sound" than the current program of trapping salmon and steelhead below the dam and hauling them upstream by truck, according to Corps officials.

But Rep. Bob Smith (R/OR), who wanted to continue the Corps' trap-and-haul program until an environmental impact statement was completed, was "surprised" at the Corps' decision. However, Smith said he has no plans to stall the project. The Corps hopes to award a contract in 3/98 and finish blasting the notch and realigning Elk Creek by 10/98. Enough of the dam would remain for it to be completed in the future.

Also in OR, the *Grants Pass Irrigation District*'s new board has renewed efforts to keep Savage Rapids Dam on the Rogue River from being removed to help threatened salmon populations. The board approved a resolution overturning an 11/97 order by the *OR Water Resources Commission (OWRC)* to produce a plan for the dam's removal. It also pledged to "fine-tune" operation of the dam and fish ladders to minimize risks to salmon and steelhead. Meanwhile, the OWRC has threatened to revoke a conditional water right that allows the district to continue operating if the dam is not removed.

In a 1/7/98 speech to industrial and agricultural users of the Columbia River, OR Rep. Elizabeth Furse (D) "admonished" regional leaders "for not doing enough to save salmon" and said she might support returning a portion of the Columbia to its free-flowing state. Furse called for lowering the reservoir behind the John Day Dam east of Portland, which could recreate about 35 miles of swift-flowing river, but which also could cut the dam's power output by half, halt barge travel, and impede irrigation.

Environmentalists and some advisors to the *Northwest Power Planning Council* see the plan as a "worthy alternative" that would "balance hydropower generation against the needs of fish and wildlife." But industrial users of the river stand to lose economically. Dan Ten Eyck of *Reynolds Metal Co.* said salmon programs have already cost the company's aluminum smelters \$15 million in increased electricity costs. Sen. Slade Gorton (R/WA) called the idea "silly." But Furse, last month, sent a letter to all 435 House members, criticizing their failure to aid in salmon recovery. She said, "We are going to have to do some tough things ... There are not solutions without pain. We need to modify the system".

Meanwhile in NC, State and federal officials on 12/17 began demolition of the Neuse River's Quaker Neck Dam, making it "the first large dam in the nation to be removed for environmental reasons". The two-week demolition project will open 75 miles of the Neuse and more than 900 miles of tributaries to striped bass, American shad, hickory shad and shortnose sturgeon. The saltwater fish have been unable to spawn in the Neuse for 45 years. The dam, built by *Carolina Power & Light Co.* in 1952 to provide a steady supply of water for a coal and oil-fired power plant, will be replaced by a weir -- "a metal structure that will back up just enough water to meet the cooling needs while leaving the river itself free".

Interior Secretary Bruce Babbitt was on hand for the start of demolition of the 260 ft. high dam and "gamely flailed] away at the concrete with a sledgehammer before a wrecking ball took over". Babbitt "spoke about his mission to heal the environmental damage caused by the country's 75,000 dams" and "credited North Carolina with setting a national example". Babbitt said, "It's an act of removal, but it's really an act of restoration and renewal".

The Quaker Neck "is in the lead of a national dam-busting trend". Last month, the Federal Energy Regulatory Commission ordered the removal of the Edwards Dam on ME's Kennebec River to restore fish habitat. *American Rivers* Pres. Rebecca Wodder praised

the demolition, calling it "a milestone in the growing trend toward taking out dams that provide little or no economic benefit".

In FL "after more than 30 years of controversy," environmental officials have filed applications to destroy Rodman Dam and restore the natural springs of the Ocklawaha River. The Dept. of Environmental Protection must now obtain permits from the *St. Johns River Water Management District* and the Corps to alter the reservoir. Meanwhile, in an effort to provide northeast FL with "far-reaching river protection," the *St. Johns Water Management District* has unveiled a five-year, \$55.8 million plan to clean the lower St. Johns River.

The protection effort would be "the largest in decades" to improve water quality along the 100-mile-long lower basin. The proposal would earmark more than \$27 million to reduce pollution from urban and suburban areas by extending waste-water treatment and retrofitting stormwater systems, while \$9 million would help reduce agricultural runoff. Almost \$13 million would go to manage pollution, sediment and aquatic habitat, with nearly \$6 million aimed at restoring degraded aquatic habitats. Other local agencies are developing separate proposals.

Sources: *AP/Seattle Daily Journal of Commerce*, 1/8 and 1/9/98; Jonathan Brinckman, *Portland Oregonian*, 1/8/98; James Eli Shiffer, *Raleigh News & Observer*, 12/18/97; James Gerstenzang, *Los Angeles Times*, 12/18/97; Bruce Henderson, *Charlotte Observer*, 12/18/97; *American Rivers* News Release, 12/17/97; and *GREENWIRE, The Environmental News Daily*, 12/9, 12/11, 12/18/97, 1/9 and 1/12/98

Flows Diverted for Fish/Tribes

Across the country, "water from subsidized farms and playgrounds created by [federal] government irrigation is being diverted to nearly extinct fish and wildlife, long-forgotten Indian tribes and cities", reports the *New York Times*. "Perhaps the most significant" example of this trend is occurring on NV's Truckee River, where the government is buying back water from alfalfa farms and cattle ranches and giving it to the

Pyramid Lake Paiute Indians, to fish-restoration projects, and to new communities in the State.

"The biggest losers will be the biggest water users -- the irrigated farms in the desert." Ted DeBraga, a third-generation farmer about 50 miles east of Reno said, "I'm the first to say that the Indians got the short end of the stick years ago. But now they're trying to do the same thing to us."

The idea driving the change, first championed by the Bush Admin. and now enacted by the Clinton Admin., is that "natural systems ... deserve as much water as agricultural lands." Many "who control water policy say the Truckee plan is a model for the reordering of river systems now taking place from the FL Everglades to the Platte River in the Plains to the Olympic Peninsula in WA".

"In (CA) a move that could influence state and federal policy for decades," San Diego and Imperial Valley in mid December announced a "tentative" deal to shift water from farms to the city. The deal "could provide San Diego with enough water for up to 2.4 million people for less money than the country has been paying to the mighty *Metropolitan Water District (MWD)*" in Los Angeles. It could be completed as early as this weekend if San Diego reaches an agreement with the *MWD* over the use of its Colorado Aqueduct to transport the *Imperial Irrigation District* water from the Colorado River. Under the tentative 45-year deal, San Diego would always pay the Imperial Valley less for its water than what it would have paid the *MWD*. The Imperial Valley would use the money for conservation measures and more efficient irrigation equipment.

The three parties are motivated to finalize the deal in part to "forestall" Interior Secretary Bruce Babbitt "from cutting back on CA's draw on the Colorado River". The state already overdraws its limit by 20%. Also, the parties want to discourage the State legislature from intervening in the water issue, and they want to "keep together the fragile alliance that has been trying to find a solution to the pollution and

salt-water problem" in the Sacramento-San Joaquin River Delta.

Sources: Timothy Egan, *New York Times*, 11/30; Tony Perry, *Los Angeles Times*, 12/12; and *GREENWIRE, The Environmental News Daily*, 12/1 and 12/12/97

100th Meridian Initiative

Congress recognized the expanding threat to our natural resources by strengthening the *Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990*. The 1990 legislation established the *Aquatic Nuisance Species (ANS) Task Force* with representatives from seven federal agencies. The Task Force is co-chaired by the National Oceanic and Atmospheric Administration and the Fish and Wildlife Service (FWS). In the reauthorization the name was changed to the *National Invasive Species Act (NISA) of 1996*.

The Act includes language recognizing that coordinated prevention and control activities concentrated along the *100th Meridian* present a unique opportunity to slow or stop the westward spread of zebra mussels and other aquatic nuisance species. The *100th Meridian* defines the large western border of OK (not the panhandle) and crosses the western sections of TX, KS, NE, SD and ND, and the Canadian Province of Manitoba.

The *100th Meridian Initiative* will require the formation of a large partnership, with cooperation from federal,

provincial, state, tribal and local agencies, as well as municipalities and private businesses to function effectively. Although not fully developed, components of the *Initiative* may include voluntary boat trailer inspection and cleaning sites with a related information and education campaign. Data will be collected to determine the risk of interstate transportation of aquatic nuisance species. High risk waters will be monitored for new infestations so that a rapid response to eradicate or contain new colonies can be put in place. Those groups known to be moving aquatic equipment with a high risk of transporting zebra mussels, like commercial boat haulers will be targeted for educational outreach.

Limited funding has been appropriated to the FWS, as the lead agency for the *100th Meridian Initiative*, to form this large cooperative effort. The FWS will provide financial assistance to participating State agencies to defray costs related to the effort. Some western stakeholders are willing to help pay expenses for this network of filters designed to stop the spread of zebra mussels and other aquatic nuisance species to their region. The *Western Regional Panel of the ANS Task Force* will provide advice for successful operation of the network.

Important waters are at risk. We have the opportunity, and share the responsibility, to protect noninfected watersheds for as long as possible. The educational spinoff from the *100th Meridian Initiative* could protect many watersheds from the invasion of aquatic nuisance species.

Article Submitted by Bob Pitman, Nonindigenous Species Coordinator - Region 2 - FWS

Western Regional Panel - Aquatic Nuisance Species

The *Nonindigenous Aquatic Nuisance Species Act of 1990* (P.L. 101-636), also referred to as the *National Invasive Species Act (NISA)* in the 1996, reauthorization was passed in part to respond to the damage caused by zebra mussels to water delivery systems and aquatic ecosystems in the Great Lakes Region. Other aquatic nuisance species have now been identified and must be



Infested boat hulls must be cleaned before being transported to prevent the spread of zebra mussels to uninfested waters.

confronted. In the West, miles of aqueducts are at risk from infestations of zebra mussels. Valuable water resources will be diminished in quality and quantity. The *Central Arizona Project* estimates that an infestation by zebra mussels could increase its operation and maintenance costs \$4-5 million annually. Marine and estuary environments are continually assailed by exotic species introductions from ballast water exchange.

Throughout the west public and private sector organizations are addressing the impacts of aquatic exotic plants and animals. In order to better coordinate efforts between the private and public sector and with the aid of Sea Grant programs, groups such as the *Western Zebra Mussel Task Force (WZMTF)* have formed. However, the influx of new exotics into the west required a more comprehensive view of the exotics problem on the part of established organizations.

Reflecting this need, Section 1203 of NISA was amended in 1996 to call for the formation of a *Western Regional Panel on Aquatic Nuisance Species (WRP)*. According to statute, the *WRP* is to comprise Western region representatives from Federal, State, and local agencies and from private environmental and commercial interests. The Act charges the Panel with six specific tasks which guide development of a regional response:

- Identify priorities for the Western region with respect to aquatic nuisance species;
- Make recommendations to the Task Force regarding an education, monitoring (including inspection), prevention, and control program to prevent the spread of the zebra mussel west of the 100th Meridian pursuant to section 1202(l) of this Act;
- Coordinate, where possible, other aquatic nuisance species program activities in the Western region that are not conducted pursuant to this Act;
- Develop an emergency response strategy for Federal, State, and local entities for stemming new invasions of aquatic nuisance species in the region;
- Provide advice to public and private individuals and entities concern-

ing methods of preventing and controlling aquatic nuisance species infestations; and

- Submit annually a report to the Task Force describing activities within the western region related to aquatic nuisance species prevention, research, and control.

At its 11/96 meeting, The *Aquatic Nuisance Species Task Force (ANSTF)* requested that the *WZMTF* work with the *San Francisco Estuary Project*, the *Prince Williams Sound Regional Citizens Advisory Council* and the *Washington and British Columbia Exotic Species Work Group* to develop a proposed membership list, including marine and freshwater interests, for the *WRP*. Representatives formed the *WRP* work group, began the task of developing a proposed membership list, and planned the first organizational meeting.

Co-Chairs of the intergovernmental *ANSTF*, invited selected representatives to participate on the *WRP*, a committee of the *ANSTF*. The *WRP* is presently comprised of 47 members representing State, federal, tribal, provincial, academic, industry, conservation organizations, and freshwater and marine interests. The geographic range of the *WRP* reaches east to KS streams, west to the CA coast and Hawaiian islands, north to AK and south to TX. Because aquatic exotics do not respect boundaries, the inclusion of freshwater and marine representatives on the *WRP* will ensure that aquatic exotic issues such as introduction and control are dealt with in a comprehensive and coordinated fashion from coast to interior waters.

The first forum and *WRP* meeting was held on 7/8-9/97 at *Portland State (OR) University*. Participants represented the geographic and organizational range of the proposed *WRP*. Attendees spent the first day becoming acquainted with invasive species issues through various presentations. The second day was devoted to organizational matters and development of draft work plans. A facilitated discussion on draft *WRP* operating guidelines and committee structure followed. Education/Outreach, Legislative/Policy and Management/Research Committees were formed to draft work plans. These work plans should

be finalized at the 3/18/98 *WRP* meeting to be held in Sacramento in conjunction with the *8th International Zebra Mussel and other Aquatic Nuisance Species Conference*.

Article submitted by Linda R. Drees, *WRP* Coordinator, Region 6 - U.S. Fish and Wildlife Service, (913) 539-3474 X20 or email: Linda_Drees@fws.gov

Biodiversity Locations

More than 66% of the world's plant and animal species and 80% of endangered species are concentrated in 17 countries, according to a study by the DC-based *Conservation International*. Latin American countries, including Colombia, Mexico, Peru, Venezuela and Ecuador, host the greatest biodiversity, followed by Asian countries such as China, Malaysia and the Philippines. Brazil is the most biologically diverse country, with 20% of the world's species and 30% of tropical rainforests. Indonesia ranks second, while South Africa, Madagascar, the Democratic Republic of the Congo, Papua New Guinea and India also made the list. The U.S. and Australia are the only two developed countries listed.

The findings, according to researchers, "could make preserving biodiversity easier if a few governments are willing to protect their environments -- and very tough if they are not". This research is included in the book *Megadiversity: Earth's Biologically Wealthiest Nations*.

Sources: *GREENWIRE, The Environmental News Daily*, 12/10/97

Bioprospecting In Yellowstone

The DC-based *International Center for Technology Assessment* and WA-based *Edmonds Institute* have sued Interior Secretary Bruce Babbitt in federal court over his refusal to release information related to a bioprospecting contract that the National Park Service (NPS) signed in August with *Diversa Inc*. The contract allows the biotech company to remove microbes that live in Yellowstone's cauldrons and develop them for commercial applications. Some enviros

say the feds got the short end of the "landmark deal -- which was quietly negotiated by the park outside of the traditional public-hearing process."

The two groups petitioned the NPS in 8/97 to gain access to key documents relating to the deal, but the agency never responded. On 11/10, NPS Director Robert Stanton issued a "blanket denial" to a Freedom of Information Act request by the *Salt Lake Tribune* and others seeking release of a "secret appendix to the *Diversa* deal that outlines the royalties the company will pay Yellowstone in return for commercializing" the microbes. The newspaper on 12/2 appealed Stanton's decision.

Sources: Christopher Smith, *Salt Lake Tribune*, 12/5/97 and *GREENWIRE, The Environmental News Daily*, 12/5/97

Natural Capital

The economic value of nature's goods and services are estimated at about \$2.9 trillion annually, according to a study recently released by *Cornell University* ecologist David Pimentel. This figure is significantly lower than the U.S. - Netherlands - Argentina study published last May, which valued the global ecosystem at \$33 trillion a year. In his study, published in the current issue of the *Bio-Science*, Pimentel established 21 specific categories for goods and services that are either directly or indirectly linked to the environment.

Worldwide, the value of seafood totaled \$82 billion, plant extracts for pharmaceuticals equaled \$84 billion and wood products hit \$84 billion. Bees pollinate an estimated \$40 billion worth of crops each year, while predator insects perform nearly \$17 billion in pest-killing services. The study says that replacing annual grains with perennial cereal grains that do not require annual tilling and replanting could reduce up to 50% of soil erosion, saving nearly \$20 billion worth of soil and \$9 billion in fuel for farm equipment every year in the U.S. alone. The U.S. currently derives about \$320 billion in environmental benefits each year.

Sources: *Ithaca Journal/Salt Lake Tribune*, 12/15/97 and *GREENWIRE, The Environmental News Daily*, 12/17/97

Conservation Plans Lack Basic Data

The "first large-scale scientific study" of voluntary habitat conservation plans (HCPs) has found that they "suffer from a variety of problems, chief among them a lack of key biological information," reports the *New York Times*. The as-yet unpublished research, conducted by a team of 119 scientists from eight universities and financed by the *National Science Foundation* and *American Institute for Biological Sciences*, "comes at a time of keen interest" in HCPs. The voluntary plans are becoming increasingly popular as a means of allowing development of endangered species habitat while still complying with the Endangered Species Act.

The researchers evaluated 206 HCPs in total and 44 plans in detail. The scientists concluded that HCPs "can work well ...when enough is known about the biology of the species involved." But for most species, "the crucial scientific information does not exist, making reliable planning difficult or impossible," the *New York Times* reports.

For example, in 80% of the plans, data was unavailable on the rates of change in species' population sizes and habitat. Monitoring was deemed inadequate in 56% of the cases. Researchers also said the methods being used to mitigate the impacts of development were generally untested. "Worse still," in some cases, the mitigation strategies being implemented "were already known to do more harm than good". *University of Washington* zoologist Peter Kareiva, who organized the study said, "The [HCP] process is not intrinsically bad. ... [But] if you don't know this basic biology, it's sort of a delusion to think you're doing anything to help these species".

Sources: Carol Kaesuk Yoon, *New York Times*, 12/23; *AP/Portland Ore-*

gonian online, 12/23; and *GREENWIRE, The Environmental News Daily*, 12/23/97

Teaming With Wildlife

Conservationists are "trying to revive a politically sticky" proposal for a federal tax on outdoor recreation equipment to benefit wild plants and animals not hunted for sport or protected under the Endangered Species Act. Under the proposal, a 0.25% to 5% tax would be added to the manufacturer's price -- not the retail price -- of products such as binoculars, bird seed, cameras and recreational vehicles.



TEAMING WITH WILDLIFE a natural investment

Although the idea "suffered a serious setback last year, when the Clinton administration distanced itself" from Interior Secretary Bruce Babbitt's personal endorsement, backers led by the *International Assn. of Fish and Wildlife Agencies* (IAFWA) "say they are gaining momentum for another try this year." They point to a "growing number" of corporate sponsors supporting the tax, which would raise about \$350 million a year. "Prominent names" among the 70-plus corporate sponsors include California-based *PETCO Animal Supplies* and Utah-based *Browning Inc.*, a gunmaker. Twelve governors are also supporting the proposal.

But the idea has received a "chilly response" from key lawmakers such as Reps. Bill Archer (R/TX) and Don Young (R/AK) who question the need for another tax. IAFWA's Naomi Edelson said the "biggest opposition" is coming from the camping industry. Myrna Johnson of the Colorado-based *Outdoor Recreation Coalition of America*, which represents equipment companies such as WA-based *REI*, said some consumers never use products like hiking boots and backpacks outdoors so to describe the proposed tax as a user fee is misleading.

Sources: Scott Sonner, *AP/Anchor-age Daily News*, 12/1/97 and National Journal's GREENWIRE, *The Environmental News Daily*, 12/2/97

Two Indicted for Trafficking Mussels

A MN clammer and his wife are accused of transporting tens of thousands of mussels that had been illegally harvested in MN and ND. Gregory Myers and Lisa Ann Myers of Brownsville were indicted in November by a federal grand jury in Des Moines, IA.

Authorities say the case is part of an illicit market in which freshwater mussel shells are funneled to Japan. There, small beads are drilled out of the shells and inserted into oysters to create cultured pearls. Harvesting of certain species is allowed on the Mississippi River south of the St. Croix River, but it is banned on inland waters in MN, WI, IA and IL. Richard Dickinson, senior resident agent with the U.S. Fish and Wildlife Service in MN, said his agency increased enforcement efforts on legal harvesters on the Mississippi last year and found violation rates of more than 50%, an indication of widespread poaching. In recent years, poachers also have been caught in ND and on the Ottertail River in Fergus Falls, MN, he said.

The indictment charges the couple with violations of the federal Lacey Act, which prohibits the interstate transportation and sale of wildlife taken in violation of state laws. Gregory Myers, a licensed clammer and buyer, was named in 13 counts and Lisa Ann Myers was named in two counts. Each also was charged with conspiring to violate the act. Each of the allegations, including the conspiracy count, carries a penalty of up to five years in prison and up to \$250,000 in fines.

The indictment says that between 9/13/95, and 11/4/96, freshwater mussels with a total wholesale value of \$34,238 were taken in MN and ND, transported to Muscatine, IA, and sold to a dealer. Four counts allege that false records were made

in Muscatine in connection with the sales.

IA environmental officials are likely to tighten restrictions on freshwater mussel harvesting as poaching, pollution, and the invasion of the zebra mussel threaten the survival of several species across the Midwest. The IA Dept. of Natural Resources this year will probably further limit the harvest of valuable washboard mussels, following a number of incidents of poaching the species in recent years.

Sources: The Associated Press, 11/28/97, *Minneapolis Star-Tribune*; Juli Probasco-Sowers, *Des Moines Register*, 12/1/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 12/5/97

Sediments Report Released

In the first-ever national report on contaminated sediments in U.S. rivers, lakes and coastal areas, the USEPA has found "widespread risks" to human health and the environment. The three-volume report, ordered by Congress five years ago and released on 1/7/98 in Washington D.C., also offers the first-ever regional comparisons and sets priorities for addressing the areas posing the highest risks.

Working with the National Oceanic and Atmospheric Admin., the Army Corps of Engineers, and other federal, State and local agencies, the EPA created a *National Sediment Inventory* based on data gathered between 1980 and 1993 at 21,000 sites in 65% of the watersheds in the continental U.S. The researchers concluded that harmful effects from polluted sediment are "likely" at about one-quarter of the locations. "Possible" but infrequent harm is expected at almost 50% of the locations, while no harmful effects are likely at the remaining one-quarter of the sites. Seven percent of the watersheds studied are "sufficiently contaminated" with PCPs, mercury or other toxics to threaten fish and wildlife and people who eat fish from those areas. The agency plans over the next three months to finalize a strategy to deal with the issue.

Although most of the 96 watersheds posing the highest risks were in the

Northeast, the evaluation found high risks in waters in every State. Some of the most severely contaminated sites were in the New York City area, Puget Sound, Boston Harbor, Detroit and Los Angeles, resulting from decades of heavy shipping traffic, local industrial pollution and contaminants flowing from sources upstream.

Coastal groups around the country applauded the long-awaited report. Pollution released into rivers, lakes, bays and estuaries often settles onto the mud that lines these waterbodies. Fish live and feed on or in these muds, and take-up many of the contaminants. According to the EPA, consumption of contaminated fish is a major source of human exposure to toxic chemicals such as mercury and dioxin.

Besides listing water-bodies that are most impacted by contaminants, the inventory also includes the following findings:

- Roughly 37 million pounds of chemicals are discharged by point sources (factories and power plants and sewage treatment plants) each year;
- The most significant source of toxic pollutants to sediment are sewage treatment plants, which receive toxic wastes from industrial facilities;
- Following sewage treatment plants, other major sources are organic chemical manufacturers, pulp and paper industries, and metal products and machinery companies, in that order;
- Chemicals with characteristics that make them likely to contaminate sediments include the pesticides toxaphene and hexachlorobenzene, silver, dioxin, dichlorobenzidine and polychlorinated biphenyls (PCB's); and



- The areas most likely to have polluted sediments from point sources include the mid-Atlantic coast, southern piedmont, Great Lakes, OH Valley, CA coast and northwestern WA state.

"Toxics in America's sediments are both a legacy of the industrial age, and an ongoing problem" said Beth Milleman, an expert on sediment contamination and former Executive Director of the *Coast Alliance*. "This report shows that our waters won't be safe to fish and swim in until we address the problem from the bottom up, starting with the sediments which line all of our waterways."

"The site inventory shows that in many areas, sediments are beyond safe levels of contamination, making fish consumption dangerous" said Jacqueline Savitz, a toxicologist, and Executive Director of the *Coast Alliance*. "The need for pollution prevention and criteria for assessing sediment contamination has never been more clear."

A coalition of environmental organizations led by the *Coast Alliance* had been encouraging EPA to release the *Inventory* for nearly two years. In early December, the *Alliance* placed the *Inventory's* release as a top priority, and asked that it be released immediately. "This is a road map and a major milestone on the road to clean sediments and save fish," Savitz added. "The next steps will be to finalize criteria for assessing the toxicity of sediments, and for Congress to use this new report as a guide to start cleaning them up."

Scientist Robert Huggert, a former EPA official who reviewed the new report, called polluted sediment "one of the largest problems in this country." Rep. Sherwood Boehlert (R/NY), who heads the House Subcommittee on Water Resources and the Environment, said his panel would review the report "very, very carefully" as it works on revising and extending water-related public works programs.

Copies of the EPA report can be obtained by calling NCES (800) 490-9198. Copies of the *Coast Alliance's 1996 Citizen's Summary* can be ob-

tained by calling (202) 546-9554.

Source: John Cushman, *New York Times*, 1/8/98; EPA release, 1/7/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 1/8/98

Pollution Efforts Failing?

One-quarter of the industries that handle the highest amounts of toxic waste increased the amount of waste they managed by more than 30% in recent years, pointing to a widespread "lack of progress in pollution prevention," according to a new report by the *U.S. Public Interest Research Group* (PIRG) and the *National Environmental Law Center* (NELC). The PIRG/NELC report reviewed Toxic Release Inventory data from 1992 to 1995 for the 277 industry sectors that reported the greatest amounts of waste generated. Though they found "a high degree of variation" among industry sectors, the analysis showed that the total amount of waste handled in the U.S. remained stagnant, dropping only from 18.8 billion pounds to 18.7 billion pounds in 1995.

The data show that industries "are failing to prevent toxic pollution at the source" even while they have made progress in reducing the amount of toxic emissions, according to PIRG. The study concludes that companies are investing more in incineration, toxics reprocessing, and other waste-management technologies rather than in "fundamental" production changes to curb the generation of toxics. But the groups noted that one-fifth of the industry sectors studied reported that they reduced production-related waste by more than 30% from 1992 to 1995. Part of the reduction may be attributable to pollution prevention accomplishments, but PIRG said they may also be a result of production shut downs and differences in reporting and accounting methods from year to year.

The report ranked the states based on projected reductions in production-related waste among their industries in 1997. NE was first, followed by ME, NY, CO, CA, NJ and IL. At the bottom are Puerto Rico, ID, OK, AL and MD.

Source: GREENWIRE, *The Environmental News Daily*, 12/5/97

Conservation Farming

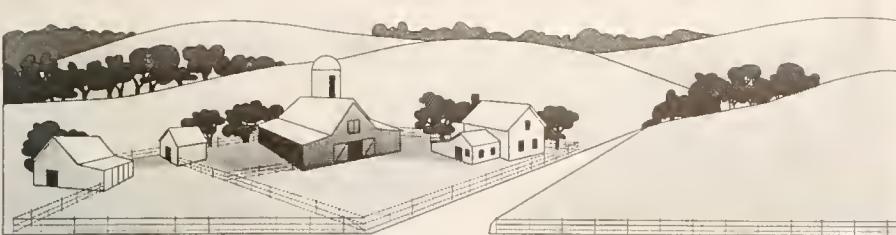
Farmers are using soil-conservation and pollution-fighting tillage methods more often than intensive plowing for the first time, according to a report by the Agriculture Dept. A county-by-county survey in 1997 showed that 110 million of the nation's 295 million acres of crops were planted this year using conservation tillage -- 6 million more than last year. Meanwhile, 108 million acres were planted with traditional soil-plowing methods.

The survey conducted by the *Conservation Technology Information Center* showed farmers in IA, IL, IN, KS and SD account for the most growth in conservation farming, contributing 5 million acres of the increase. Conservation tillage leaves crop residue such as stems, stalks and leaves over 30% or more of the soil surface between harvest and the next planting. The government says the practice reduces soil erosion by up to 90% while providing wildlife habitat.

Also "In their battle to control nutrient runoff from their fields," some farmers are using a satellite to monitor the amount of nitrogen and phosphorous in the ground. James Richardson, of MD-based *Ecosystem Management Inc.*, said farmers should be able to reduce their use of fertilizers by using the new practice. The satellite, which communicates with a receiver mounted on a tractor, tells farmers the exact point at which they've taken soil samples for nutrients in the past. The practice, known as precision farming, helps farmers accurately compare nutrient amounts and avoid over application of fertilizer

Meanwhile, the USEPA may begin requiring small farmers to obtain pollution discharge permits under the Clean Water Act. The requirement could expand to cover farmers who use animal waste as fertilizer on their farms with fewer than 1,000 animals. Currently farmers only need permits for animal waste lagoons.

The USEPA currently sets the minimum regulations for livestock facilities in all



50 states. Large livestock production units are included as a part of the National Pollutant Discharge Elimination System (NPDES). A NPDES permit is required by the USEPA in the following instances:

- livestock production units with over 1,000 animal units (700 dairy cows, 500 dairy cows and heifers, 1,000 steers, etc.) and a waste discharge other than a 25-yr, 24-hr storm;
- livestock production units with between 300 and 1,000 animal units that directly discharge wastewater through a man-made device;
- livestock production units that have a stream running through a feedlot; or
- any size livestock production unit that the USEPA feels has a waste discharge problem.

The USEPA also requires each state to develop its own set of regulations for animal waste control. State regulations for animal waste control can be more restrictive than the USEPA.

Sources: Charles Hoskinson, *AP/San Francisco Chronicle/Examiner* online, 10/23/97; *Investor's Business Daily*, 10/24/97; Ted Shelsby, *Baltimore Sun*, 1/10/98; and *GREENWIRE, The Environmental News Daily*, 10/27/97 and 1/12/98

Livestock Wastes

Western farm towns that now host large hog operations have become the "latest front in the battle between commerce and the environment," reports the *Wall Street Journal*. "Massive hog farms, under pressure from environmentalists in traditional pig-producing strongholds like NC and IA, are moving to ... rural CO, OK, TX, UT, and WY, where environmental regulation is often less stringent." The article focuses on

efforts by hog producers to build the world's biggest hog operation in Milford, UT.

Meanwhile, a panel of pork industry and government representatives has recommended national environmental standards for the construction and operation of feedlots. Following an eight-month study, the *National Environmental Dialogue on Pork Production* on 12/17 recommended certification of employees and operators, tough penalties for repeat offenders, and "disincentives" to prevent those offenders from moving from state to state. The panel, which included officials from the USEPA and the Agriculture Dept., also urged restrictions on applying manure as fertilizer. The panel's report will be presented to Congress and government agencies considering environmental regulation of the livestock industry.

In VT lawmakers plan to consider a measure early this year that would subject proposals for large-scale farms to stricter environmental review and give the state Agriculture Dept. greater oversight of such operations. Environmentalists said the bill, which would apply primarily to dairy farms, needs a provision for citizens' appeals.

In MN Governor Arne Carlson on 12/15 called for a "sweeping," \$3 million study on the environmental impacts of MN's livestock industry, which has raised concerns due to its recent growth. But Carlson will not call for a temporary moratorium on feedlot expansion, as Attorney General Hubert Humphrey III, a Democratic gubernatorial candidate, did last month.

In WI The *Black Earth Conservation Organization* has raised concerns that the Dept. of Natural Resources (DNR) has not done enough to prevent cattle waste from polluting the Black Earth

Creek, a trout stream in southern WI. DNR Secretary George Meyer has yet to respond to a 11/3 letter from the group, which requested emergency runoff and erosion-control measures.

In MS the Legislature will debate measures this session that would put a moratorium on hog farm construction and block state funding for any development of new farms. But House Agriculture Committee Chair Steve Holland (D), who opposes the measures, said hog farms do not pose a "real environmental concern".

In NC environmentalists opposing corporate hog farm expansion protested outside the annual convention of the *American Farm Bureau* in Charlotte. The *Blue Ridge Environmental Defense League* unfurled a 60-foot banner reading "Don't Hog Our Air and Water" from a window of the hotel where the convention was held.

OK legislators on 1/12 urged the state House and Senate to impose a one-year moratorium on new large-scale hog and poultry farms in that state. A joint resolution proposed by House Speaker Loyd Benson (D) and Senate Pres. Stratton Taylor (D) seeks to curb the expansion of high-density, corporate-owned farms until a state production-management policy is developed. The leaders say the measure, which has the force of law, would be considered soon after the legislative session begins on 2/2 and would take effect the day it is signed by the governor. Farms that have already filed applications with the OK Agriculture Dept. would be exempt from the moratorium. Members of *ProAg*, a hog industry group, argued that the moratorium would hurt the industry without improving water quality. The state *Animal Waste and Water Quality Protection Task Force* (AWWQPTF) recently recommended that counties be allowed to decide whether to ban large-scale animal operations.

Meanwhile, the OK Agriculture Dept. is investigating a large-scale hog operation after State inspectors discovered improperly buried, decomposing hogs at 35 farms in Texas County. Dan Parrish, the department's water quality director, "reported the alleged violations [by *Seaboard Farms Inc.*] are the worst he has seen". Paul Hitch, a member of

the state Agriculture Board who holds contracts with *Seaboard*, on 12/17 downplayed the alleged violations. Hitch said, "In my mind, dead pigs is not a huge environmental problem, but it certainly is a public relations problem".

That same day, the OK Agriculture Board passed its first-ever emergency rules for large-scale poultry producers to curb nitrate and phosphorus runoff. Environment Secretary Brian Griffin has called on the State legislature to take the "moral high ground" next year by passing restrictions on large-scale animal operations to protect the state's water quality. Gov. Frank Keating's (R) 15-member

Among the problems that have been blamed on huge farms of cattle, hogs or poultry are a spill of 35 million gallons of animal waste that killed 10 million fish in NC in 1995; the depletion of oxygen in the Gulf of Mexico's "dead zone" at the mouth of the Mississippi River; and the appearance of the toxic microbe *Pfiesteria piscicida*, which may have caused fish kills in Chesapeake Bay tributaries in 1997.

Sen. Tom Harkin (D-IA), the committee's ranking Democrat, called the study "the first comprehensive report to illustrate the magnitude of environmental problems caused by animal waste." Harkin seeks to hold hearings by 3/98 on legislation he intro-

on *Globe* online, 12/19/97; Conrad deFiebre, *Minneapolis Star-Tribune*, 12/16/97; Mike Ivey, *Madison (WI) Capital Times*, 11/25/97; Bobby Harrison, *Tupelo (MS) Daily Journal*, 1/14/98; Bruce Henderson, *Charlotte Observer*, 1/14/98; Lynn Franey, *Kansas City Star*, 1/10/98; Mick Hinton, *Oklahoma City Daily Oklahoman*, 12/17, 12/18 and 1/13/98; Mike Glover, AP/mult., 12/9/97; Debbie Howlett, *USA Today*, 12/30/97; P.J. Lassek, *Tulsa World*, 11/30/97; and *GREENWIRE, The Environmental News Daily*, 12/1, 12/3, 12/18, 12/19/97 and 1/5, 1/14 and 1/16/98

***Pfiesteria* Update**



AWWQPTF on 12/1 had submitted more than 50 recommendations, including the state's first regulations on the poultry industry, the location of large-scale farms, and fees on the industry to fund enforcement. Griffin, who chairs the task force, acknowledged that the expense of the recommendations would make them controversial, but he predicted they would be passed. Griffin said that if states do not address the issue, the USEPA could intervene to keep agricultural runoff from waterways.

Nationally, according to a Senate study released in December American farm animals produce 130 times more wastes than the nation's human population. The study, compiled by the Democratic staff of the Senate Agriculture Committee, noted that 60% of U.S. waterways are "impaired" and that agricultural runoff is the main source of that pollution. The spread of large-scale livestock operations has increased the risk of waste spills, the report said

duced in 11/97 that would force the Agriculture Dept. to monitor waste disposal and establish national standards for handling animal waste.

Meanwhile, the USEPA is expected to issue its first "action plan" for addressing animal wastes, and industry lobbyists have been developing their own set of guidelines. Al Tank of the *National Pork Producers Council (NPPC)* said, "This is a defining moment for us. We either have to find a solution or the pork industry will leave the [U.S.] for Canada or Argentina".

In a pilot project to reduce "obnoxious" odors from hog farms, the *NPPC* has deployed agricultural engineers to large-scale farms in IA, MN, MO, and NC on "odor-finding" missions. At the *University of Minnesota*, a "professional smeller" checks the intensity of air samples, and results and recommendations are passed on to the farmer, who ultimately decides whether to make changes.

Sources: Susan Stocum, *AP/Birmingham Herald* online, 12/17/97; *AP/Bost-*

Scientists this spring plan to study "hundreds" of fishers, shellfish inspectors and residents of coastal areas in MD, NC and VA to determine whether the toxic microbe *Pfiesteria piscicida* can harm people in natural settings. MD medical experts last year announced that *Pfiesteria* caused memory loss and confusion in at least 13 people who had been in contact with affected waters. And a VA medical team said it found neurological problems in two of four people examined after exposure to *Pfiesteria*, but "said that the ailments were relatively minor" and may not have been caused by the fish-killing organism.

Both NC and VA officials questioned whether the microbe could harm people outside a laboratory setting, and MD researchers have conceded that their "hurried, small-scale studies" of suspected victims "could not deliver a certain diagnosis of *Pfiesteria* poisoning." Results of the upcoming study will be compared to a control study of people who avoided *Pfiesteria*-laden waters.

VA Health Commissioner Randolph Gordon said scientists will also learn more about *Pfiesteria*'s impact on human health from a multi-year study that VA will conduct with DE, FL, MD, NC and the federal *Centers for Disease Control*. Preliminary results of that study might be available late next year.

Meanwhile, lab tests on rats "have confirmed for the first time" that toxins produced by *Pfiesteria* can impair learning ability, according to a study by

Duke University researchers. The study, published in the 12/97 edition of the journal *Environmental Health Perspectives*, found that rats exposed to the microorganism "were significantly retarded in their learning" compared with rats that were not exposed. The study is the first to document *Pfiesteria*'s neurological effects in a controlled experiment in a peer-reviewed scientific journal.

A *Coalition* of 10 environmental groups, including the *Sierra Club* and *Chesapeake Bay Foundation*, has urged MD Gov. Parris Glendening (D) to propose a tax on chicken to pay for protection of the Chesapeake Bay from pollution as part of a plan to address the *Pfiesteria* outbreaks. The tax of at least \$0.01/lb on each chicken raised in MD was described as a "manure disposal surcharge" aimed at making large-scale poultry producers pay their "fair share" of the costs of cleaning up pollution caused by agricultural runoff.

The *Coalition* estimates that such a tax could raise \$13 million a year for bay protection efforts, but MD poultry lobbyist Gerard Evans said such a tax would be "disastrous" for the industry. Glendening spokesperson Ray Feldmann said the governor would consider supporting the tax, and State Del. James Hubbard (D) said he may introduce a tax bill in the General Assembly. But state Sen. Barbara Hoffman (D), chair of the Budget and Taxation Committee, said such a proposal would have little chance of passing.

The *Coalition's* recommendations, which "closely parallel" those suggested by a MD task force on *Pfiesteria*, also included a moratorium on new chicken feedlot operations, state funding of cover crop programs, and requiring farmers to participate in nutrient-management plans.

Meanwhile, MD officials on 1/5/98 defended the State-appointed commission's recommendation that every farm in the state work to curb agricultural runoff. Although the cause of the *Pfiesteria* outbreaks remains uncertain, a commission appointed by Gov. Glendening found that runoff of fertilizers and animal wastes was a factor. During a public hearing in

early January, farmers contended the solutions being considered would force them to shoulder the costs of *Pfiesteria* control measures and put them at a competitive disadvantage. State Sen. Brian Frosh (D), chair of the environment subcommittee, has said that if Glendening does not propose a nutrient-management program, he will introduce a bill modeled on a PA law that since 10/97 has regulated the use of animal waste as crop fertilizer. MD's new agriculture secretary, Henry Virts said that the cost of enrolling all State farms in nutrient-management plans by 2000 could cost \$9 million over the next two years and that installing equipment to reduce phosphorus levels in chicken manure would cost another \$14 million.

Gov. Glendening in his State of the State address on 1/20 unveiled a \$41.5 million legislative proposal to reduce runoff of nutrients into Chesapeake Bay and combat *Pfiesteria*. Although the plan, which would be phased in over three years, includes measures that target landscaping companies, sewage plants and septic tanks, Glendening said the "most important" element is the state's first "mandatory, farm-by-farm limits" on the use of fertilizer.

The proposal includes a "menu of sweeteners" to help MD farmers comply with the regulations. Individual farmers would be given \$1 million a year in tax credits and a \$1.1 million aid program would help them develop plans for curbing runoff. Joseph Bryce, Glendening's chief legislative aide, said such measures would not cover all costs to farmers, but the governor hopes to pass on unmet costs to large poultry companies. Glendening insisted the state was not blaming farmers for *Pfiesteria* outbreaks. But state Sen. J. Lowell Stoltzfus (R) disagreed: "[Glendening] sent a very clear message to the agricultural community that 'We don't care about you.' I think he swallowed the extremist environmental agenda hook, line and sinker".

Former MD Agriculture Secretary Lewis Riley said the state should determine how much phosphorus and nitrogen could be used and how excess poultry waste should be properly

disposed of before imposing deadlines on nutrient-management plans. The proposal to combat the microbe is expected to face the "stiffest" opposition from the state legislature. Dru Schmidt-Perkins of *Clean Water Action*: "[Environmentalists will] be outgunned here by the poultry industry 10 to 1".

Meanwhile in neighboring VA, Gov. George Allen (R) on 12/19 presented a two-year spending plan to state lawmakers that includes \$63 million for Chesapeake Bay restoration.

Sources: Eric Wee, *Washington Post*, 12/20/97; Rex Springston, *Richmond Times-Dispatch*, 12/20/97; Lee Bowman, *Scripps Howard/Washington Times*, 12/21/97; Joby Warrick, *Washington Post*, 12/22/97; Hsu/Nakashima, *Washington Post*, 12/20/97; Kristen Klick, *Fairfax (VA) Journal*, 12/10/97; Pamela Sebastian, *Wall Street Journal*, 12/11/97; Michael Dresser, *Baltimore Sun*, 12/18/97; Ted Shelsby, *Baltimore Sun*, 1/7/98; Timothy Wheeler, *Baltimore Sun*, 12/28/97; Todd Shields, *Washington Post*, 1/18/98; Dewar/Dresser, *Baltimore Sun*, 1/22/98; Todd Spangler, *Washington Times*, 1/22/98; Thomas Waldron, *Baltimore Sun*, 1/22/98; LeDuc/Goodman, *Washington Post*, 1/22/98; and *GREENWIRE, The Environmental News Daily*, 12/18, 12/22/97 and 1/7, 1/20, and 1/22/98.

Contaminated Fertilizers

Two "major" suppliers of agricultural fertilizer were sued in WA State in late October by two farmers claiming their crops were ruined by high levels of arsenic, mercury, and other toxic waste. The farmers allege that WA-based *Quincy Farm Chemicals Inc.* and MN-based *Cenex Inc.* concealed the hazwaste content in their products. Plaintiff farmer Paul Giraud, who obtained independent tests of the products, claimed that the fertilizers are not what they were advertised to be. He said the fertilizer has poisoned his land, causing repeated crop failures. Asserting that "numerous" other farmers may have been affected by the fertilizer, lawyer Steve Berman has asked for the cases to be certified as class-action suits. *Cenex* spokesperson Lani Jordan said the company has "always distributed what we believe are safe products." *Quincy Farm Chemicals* has yet

to comment on the allegations.

"Concerned about the lack of regulation, tests and standards for potentially toxic material in fertilizer," officials of *IMC Global* -- the world's largest phosphate producer -- said they are surveying all raw materials the company sells as fertilizers in the U.S. to ensure the products do not contain harmful levels of heavy metals. William Tolley of *IMC AgriBusiness*, the retail arm of the company, said *IMC Global's* action will help the company eventually set its own standards for heavy metal content in its fertilizers.

Meanwhile, a group representing fertilizer regulators from most of the 50 states has named a committee of industry executives and regulators to develop a new label that would reveal the products' "toxic tag-alongs." Currently, fertilizers are not required to identify all their ingredients, and many list only the beneficial ones. But a *Seattle Times* series last summer revealed that toxic industrial wastes are routinely recycled into fertilizers. However, some members of the *Assn. of American Plant Food Control Officials* (AAPFCO), suggested such labels would be "alarmist" and confuse the public. But David Terry, KY's chief fertilizer regulator, said the move would help respond to outside "pressure". The AAPFCO is expected to propose a label within six weeks and take at least two years to review it. Official adoption would depend on further State action.

A USEPA expert assured the group that sewage sludge applied to farmland does not pose a health threat. Alan Rubin said such concerns stem from a lack of understanding, and the practice need not be banned. Supporters say recycling waste into fertilizer is preferable to incinerating it or dumping it in landfills. Michael Shapiro, an USEPA solid-waste management official, said the *Seattle Times* series had prompted the agency to launch an investigation of the practice.

Sources: Aviva Brandt, *AP/mult.*, 10/21/97; *AP/Portland Oregonian* online, 10/14/97; Duff Wilson, *Seattle Times*, 8/7/97; Paul Tolme,

AP/San Francisco Chronicle/Examiner online, 8/6/97; Eric Nalder, *Seattle Times*, 8/5/97; and *GREENWIRE, The Environmental News Daily*, 8/13, 10/15 and 10/23/97

White House Hypoxia Study

The White House has launched an 18-month study to assess the causes of a 7,000 mi² dead zone in the Gulf of Mexico and propose management strategies. The White House *Council on the Environment and Natural Resources* has formed a multi-disciplinary "Hypoxia Assessment Work Group" to conduct the study.

Dissolved oxygen levels in Gulf waters have fallen to 2 ppm, far below the 5 ppm needed to support aquatic life. The extent to which agricultural fertilizers, manure and municipal sewage are creating these "hypoxic" conditions will be determined. About two-thirds of the nation's harvested cropland and the treated sewage of 27% of the U.S. population empties into the Mississippi River, which then transports this nutrient-rich mixture to the Gulf.

When temperatures climb in the summer, the nitrogen and phosphorus found in fertilizers and sewage stimulate huge blooms of microscopic marine algae. As the algae die, they sink to the bottom of the Gulf and begin to decay. Decomposition robs the water of the oxygen aquatic life need to survive. Until the fall winds arrive to mix the Gulf layers, the bottom waters remain hypoxic.

While anaerobic conditions have occurred along the Gulf coast for decades, the recent large-scale oxygen depletion is a troubling signal, according to scientists. Between 1985 and 1993, the area of the dead zone averaged between 3,000 and 3,500 mi². In 1993, however, major flooding along the Mississippi River delivered an exceptionally large load of nutrient-rich sediments to the Gulf. After the flood, the area of the dead zone doubled to 6,500 mi².

Despite average river flows since the flood, the dead zone has remained as large. In mid-July of this year, Dr. Nancy Rabalais, a marine ecologist

with the *Louisiana Universities Marine Consortium*, measured the dead zone at 6,120 mi². The area stretched from the Mississippi Delta to Calcasieu Pass, near the TX-LA border. It extended 30 mi. out to sea and reached depths of 120 ft.

Hypoxic waters threaten the region's lucrative fishing and shrimp industries. Amendments to the Magnuson-Simpson Fisheries Act last year may force federal and state officials to recognize the effects of fertilizers and sewage on the Gulf. The National Marine Fisheries Service is currently working on guidance for the Act.

The *Hypoxia Assessment Workgroup*, which includes members of academia, tribal leaders, and federal and state agencies with an interest in the Mississippi River and the Gulf of Mexico, will develop the following six interrelated reports:

- *Distribution, dynamics, and Characterization of hypoxia causes:* This report will describe seasonal, interannual, and long-term variation in hypoxia, and its relationship to nutrient loads from the Mississippi/Atchafalaya system. It will also document the relative roles of natural and human-induced factors in determining the size and duration of the hypoxic zone.
- *Ecological and economic consequences of hypoxia:* This report will evaluate the ecological and economic consequences of hypoxia, including impacts on Gulf of Mexico fisheries and the regional and national economy. It will articulate both ecological and economic consequences and, to the extent appropriate, their interaction.
- *Sources and loads of nutrients transported by the Mississippi River to the Gulf of Mexico:* This report will identify the sources of nutrients within the Mississippi/Atchafalaya system and has two distinct components. The first is to identify where, within the basin, the most significant nutrient additions to the surface water system occur. The second, more difficult component, is estimating the relative importance of specific human activities in contributing to these loads.
- *Effects of reducing nutrient loads to surface waters within the basin and Gulf of Mexico:* This report will estimate the effects of nutrient source reductions in the Mississippi/Atcha-



falaya Basin on water quality conditions in these waters and on hypoxia in the Gulf of Mexico. Modeling analyses will be conducted to aid in identifying magnitudes of load reductions needed to affect the extent and severity of hypoxia in the Gulf of Mexico.

• *Evaluation of methods to reduce nutrient loads to surface water, ground water, and the Gulf of Mexico:* The main focus of this report will be to identify and evaluate methods to reduce nutrient loads to surface water, ground water, and the Gulf of Mexico. The analysis will not be restricted to only reduction of sources. It will also include means to reduce loads by allowing the system to better accommodate those sources through, for example, modified hydraulic transport and internal cycling routes.

• *Evaluation of social and economic costs and benefits of methods for reducing nutrient loads:* In addition to evaluating the social and economic costs and benefits of the methods identified for reducing nutrient loads, this analysis will include an assessment of various incentive programs and will include any anticipated fiscal benefits generated for those attempting to reduce sources.

An "integration team," composed of team leaders and additional government and academic experts, will integrate information from the six reports into an assessment that will consider various policy actions for reducing nutrient loads. The ultimate target audience for the integrated assessment is the *Gulf of Mexico Hypoxia Task Force*, currently led by the USEPA. However, "lay versions" of each of the six reports will be prepared and made available to the public.

Source: Andy Seth, Staff Writer, *Mississippi Monitor*, Nov/Dec 1997

Miscellaneous River Issues

Everglades Filter Marshes - The first Everglades filter marsh on 12/9 began releasing cleansed water, marking a "modest milestone" in FL's \$700 million effort to rid the wetlands of phosphorus-tainted runoff from farms and cities. The 870-acre artificial marsh is one of six the Corps of Engineers is scheduled to build by 2003. The *South Florida Water Management District* said cattails and other plants are removing more than 40% of the phosphorus draining from 10,000 acres of land owned by *U.S. Sugar Corp.* Source: Robert King, *Palm Beach Post*, 12/10/97

IA Sewage Spill - A mechanical problem at a waste treatment plant in Akron, IA, caused an estimated 500,000 gallons of raw sewage to spill into the Big Sioux River between 1/2-1/5/98. Officials notified downstream residents of a potential threat to drinking water. Sources: *USA Today*, 1/7/98; and National Journal's *GREENWIRE*, *The Environmental News Daily*, 1/8/98

LA Voters Favor Green Tax - A statewide poll of 901 registered voters in LA found that 62% favor linking a company's environmental record to some state tax breaks it may receive for building or expanding in the state. The greatest support for the tax breaks came from voters making \$45,000 or more and those with college degrees. Sixty-eight percent of Republicans and of political independents polled supported the linking. New Orleans pollster Ed Renwick found the poll's results surprising be-

cause they suggest environmental protection rates highly with Republicans, a finding he said that is inconsistent with the party's state and national leadership. Meanwhile, the poll also found that 17% of those polled rated air and water quality as an extremely serious problem, while 38% rated it serious. Twenty-seven percent said they had little confidence in the state Dept. of Environmental Quality and 57% of all respondents think Gov. Mike Foster (R) is doing a good or excellent job in protecting the environment. The poll conducted between 12/1-10/98 has a +/- 3% margin of error. Sources: Mike Dunne, *Baton Rouge Advocate*, 1/6/98; and National Journal's *GREENWIRE*, *The Environmental News Daily*, 1/8/98

MO Pollution Fines - The state collected a record \$4.1 million in penalties and other damages from polluters in 1997, according to Attorney General Jay Nixon. Meanwhile, the Dept. of Natural Resources said pork producer *Premium Standard Farms* late last month spilled 2,000 gallons of waste into Spring Creek in Sullivan County. Sources: *AP/St. Louis Post-Dispatch*, 1/5/98; and National Journal's *GREENWIRE*, *The Environmental News Daily*, 1/8/98

MN Environmental Program - "In an attempt to establish a lasting environmental legacy," Gov. Arne Carlson (R) announced an "unprecedented" initiative to protect natural resources. Sources said Carlson would allocate \$50 million to wildlife habitat protection, \$43 million to parks and trails, \$37 million to water-quality improvement in lakes, \$8 million to revamp licensing and permitting processes, and \$6 million to improve Itasca State Park. The package is comprised of ideas Carlson sought last summer from environmental and outdoor groups, and these groups gave "generally high marks" to the \$201 million environmental bond package. Carlson will present the initiative to the state legislature this year. Source: Bill Wareham, *AP/Minneapolis Star Tribune*, 12/19/97; Dennis Lien, *St. Paul Pioneer-Press*, 12/17/97 and *GREENWIRE*, *The Environmental News Daily*, 12/22/97

MN Refinery Pledges \$80 Million - "Troubled by lingering petroleum leaks and a state investigation," *Koch Refining Co.* on 1/13/98 pledged to spend nearly \$80 million over ten years on

environmental improvements at its Rosemont plant. The refinery plans to move most of its underground product lines above ground, expand groundwater monitoring networks, clean up past spills, study and improve underground sewers, improve a management program for storage tanks, and begin a water reuse/recycling study. Koch officials said they also support the formation of an advisory council made up of local residents, refinery employees and the MN Pollution Control Agency (MPCA). The new improvements should put the company "well above regulatory standards in many areas." MN officials in 9/97 discovered a "huge pool" of gasoline stretching from the refinery to near the Mississippi River, and the MPCA is investigating alleged violations of water quality and hazardous waste rules. Meanwhile, the MN House Environment and Natural Resources Committee is expected to question whether the MPCA has been "tough enough" on the refinery. Sources: Dennis Lien, *St. Paul Pioneer Press*, 1/14/98; and National Journal's *GREENWIRE, The Environmental News Daily*, 1/14/98

MN Wetlands Drainage Plan - A "modest" plan to dig a culvert under a Minneapolis highway has highlighted a "clash" between two MN laws -- one that protects wetlands and one that allow crews to drain them to foster development. The *National Audubon Society* and hundreds of petition signers contend that the \$250,000 project amounts to a government subsidy to destroy wetlands protected under a state conservation law. But some landowners say the State should dig the culvert because when it built the highway in 1966, it cut off numerous drainage paths -- creating the wetlands in the first place. A regional watershed district, citing state law, ordered the MN Transportation Dept. (DOT) to dig the drainage culvert and ruled that the project would be exempt from the conservation law that requires mitigation for the loss of certain wetlands. The *MN Board of Water and Soil Resources* is expected to decide in 1/98 whether DOT would be responsible for mitigating any wetlands loss incurred by the project. Sources: Dean Rebuffoni,

Minneapolis Star Tribune 12/1/97 and *GREENWIRE, The Environmental News Daily*, 12/4/97

MT Concert - Musician Bonnie Raitt performed a concert in Helena in December to benefit MT conservation groups fighting the development of large gold mines in the State. Meanwhile, the industry-based *MT Resource Providers Coalition* has scheduled an alternative concert "to give the public a chance to raise money for food banks instead of environmental groups". Sources: Grant Sasek, *Helena Independent Record*, 12/10/97 and Erin Billings, *Billings Gazette*, 12/8/97.

NC Paper Wastes - State officials said *Champion International Corp.* can continue discharging tea-colored wastewater into the Pigeon River, but the Canton paper mill must develop a plan to make the water 50% clearer by 5/1/98. Sources: *USA Today*, 12/24/97; and National Journal's *GREENWIRE, The Environmental News Daily*, 1/6/98

NC Pesticide Clean-up - Nine companies on 12/9 agreed to pay more than \$60 million to clean up an Aberdeen, NC, Superfund site where pesticide-laden wastes were dumped for more than 50 years. Under the settlement reached in U.S. District Court in Greensboro, *Bayer Corp.*, *Dupont*, *Kaiser Aluminum & Chemical Corp.*, *Mobil Oil Corp.*, *Shell Oil Co.*, *Union Carbide*, *Grower Service Corp.*, *Olin Corp.* and *Novartis Crop Protection* will pay the USEPA about \$50 million to clean up the Aberdeen Pesticides dump. The companies will also pay the federal government \$8.5 million for past cleanup costs and will pay any future costs of USEPA oversight. The federal government will absorb \$6.5 million of the cost because some of the polluters have gone out of business. Meanwhile, the *NC Environment Management Commission* has adopted a "landmark" plan to clean the Neuse River by cutting the amount of nitrogen pollution by 30% within five years. Gov. Jim Hunt (D) pushed for "fast action" after algae blooms and the toxic microbe *Pfiesteria piscicida* triggered fish kills in the river. Under the plan, landowners will be barred from clearing woods within 30 ft. of the river. Hog and poultry farmers will

be required to improve the way fertilizer is applied to fields, and cities will be forced to filter more nitrogen from the wastewater pumped from their sewage treatment plants. Sources: James Eli Shiffer, *Raleigh News & Observer*, 12/11 and 12/12/97; and *GREENWIRE, The Environmental News Daily*, 12/12/97

NE Wetlands - State residents would be willing to pay almost \$13 million to double the area of wetlands in southern NE, according to a survey of nearly 1,200 households by *University of Nebraska-Lincoln* agricultural economist Richard Perrin. Wetlands in the Rainwater Basin have dropped from 100,000 acres in 1900 to 34,000 acres now. Source: Julie Anderson, *Omaha World-Herald*, 12/14/97; and *GREENWIRE, The Environmental News Daily*, 12/18/97

OH Wetlands Victory - In response to an appeal by a coalition of environmental groups, the OH EPA on 12/8 agreed to a settlement that will make it harder to drain or fill state wetlands without full environmental review. The *National Audubon Society* and ten other groups appealed the OHEPA's 3/97 plan to allow wetland development under Nationwide Permit 26. The settlement, which awaits formal approval, will prohibit "expedited review" of development on any wetland larger than one acre. Permits affecting streams on tributaries of the state's 10 scenic rivers, 3 national scenic rivers and the Vermillion R. will not be granted. Vince Squillace of the *OH Homebuilders Assn.* called the plan "expensive" and "time-consuming". But environmental groups contend that OH cannot afford to lose the remaining 10% of its original wetlands. A "broad-based" bill that advocates comprehensive land-use planning, inner-city redevelopment, creation of "agricultural security areas" and increasing the authority of county commissioners over wells, septic systems and lot splits was presented to the OH House of Representatives on 12/9. Sources: Randall Edwards, *Columbus Dispatch*, 12/9/97; Kevin O'Hanlon, *AP/Cleveland Plain Dealer* online, 12/10/97; Brian Williams, *Columbus Dispatch*, 12/7/97; and *GREENWIRE, The Environmental News Daily*, 12/12/97

Polluters Pay In FL - In a "blow" to environmentalists, the FL Supreme Court on 11/26 ruled that all polluters, not just the sugar industry, must share the cost of cleaning up the Everglades. The court ruled that a "polluter pays" amendment to the state constitution that was "overwhelmingly" approved by state voters in 11/96 holds all polluters inside and outside the region financially responsible for Everglades restoration. Environmentalists have long blamed the sugar industry for polluting the region with fertilizer-laden runoff, and argued that sugar firms should be held solely responsible for cleanup. But the court unanimously sided with the sugar industry, which contended that rapid development and population growth had also caused pollution. The state legislature now must develop a plan to implement the amendment and determine how Everglades restoration should be financed. Attorney Thomas Rumberger of the environmental group *Save Our Everglades* said the ruling will force lawmakers to reconsider the 1994 *Everglades Forever Act*, which requires area farmers to pay up to \$322 million of the restoration project over the next 20 years. Since the park was created, the numbers of wading birds have dropped 90% and 10 species of forest birds have vanished from the area. Sources: *Reuters/mult.*, 11/28/97; Lori Rozsa, *Miami Herald*, 11/27/97; Will Lester, *AP/San Francisco Chronicle/Examiner* online, 11/29/97; Cyril Zaneski, *Miami Herald*, 11/28/97; and *GREENWIRE, The Environmental News Daily*, 12/1/97

Recreation Damages - A recent jury verdict in CA that awarded damages for "lost recreation" opportunities following an oil spill could be a model for future litigation, according to legal experts. Several government and private environmental attorneys nationwide "applauded" the Orange County verdict that directs the shipping firm *Attransco* to pay the public \$18.1 million in damages, 66% of it for lost recreational use of beaches and harbors. The decision "could prove one of the biggest legacies" of the 1990 spill, the attorneys said. Robert Klotz, a senior attorney at the Justice Dept., said the case probably represents the first time that litigants

have debated the monetary value of beach closures. The verdict "could give government attorneys more clout in future settlement talks in other oil spill cases" by resolving an area of uncertainty, attorneys said. In turn, such cases could settle sooner, making funds for wildlife restoration available more quickly. Sources: Deborah Schoch, *Los Angeles Times*, 12/15/97 and *GREENWIRE, The Environmental News Daily*, 12/16/97

TVA Lands - The Tennessee Valley Authority (TVA) on 12/2 said that 12,800 acres once designated for the Columbia Dam should be given to TN. After months of debate with environmentalists and State officials, the TVA recommended that 6,800 acres be placed under restrictive protection, 2,200 acres be opened for public use, and 3,800 acres be used to supply water. Before the land is transferred, the *TN Building Commission* must approve a State land-use plan, which will stress the water supply needs of the area, according to an advisor for Gov. Don Sundquist (R). Sources: *AP/Birmingham Herald* online, 12/3/97; and *GREENWIRE, The Environmental News Daily*, 12/5/97

TX Water Pollution Plan - TX officials on 12/10 unveiled an initiative to reduce pollution in 140 rivers, lakes and streams in the state, in response to a USEPA mandate directing states to enforce portions of the Clean Water Act dealing with surface water quality. Under the plan, environmental officials will identify the amount of pollution each watershed can tolerate while State and local agencies will implement new controls, such as more strict wastewater permits and tighter fertilizer and pesticide regulation. Of the State's 368 watersheds, 140 are not in compliance with State standards for levels of bacteria, pesticides, and toxic chemicals, according to Barry McBee of the Natural Resource Conservation Commission. The first 40 studies are to be completed in five years, with all 140 to be finished within 10 years. "Although McBee could not put a price tag on the entire project, he said studying the Arroyo Colorado River, one of the first under the project, would cost \$500,000". Sources: Pauline Arrillaga, *AP/Houston Chronicle*, 12/11/97 and *GREENWIRE, The Environmental News Daily*,

12/12/97

WV Pulp Mill Plans Abandoned - "Environmentalists declared victory" in December as New York-based *Parsons & Whittemore Inc.* "abandoned" plans to build a \$1 billion pulp and paper mill on the Ohio River in Apple Grove. *Parsons & Whittemore* Pres. Arthur Schwartz withdrew an air-pollution permit application from the WV Division of Environmental Protection (DEP) on 12/17, "just moments" before the agency notified the company it was rejecting the application. The rejection was based on the company's failure to meet a State deadline for acquiring land for the project. Schwartz blamed the project's demise on the combination of delays in issuing permits -- the mill was first proposed in 1989 -- and on recent economic troubles in Southeast Asia. Schwartz said, "Had the State acted responsibly in a reasonable time frame to permit the project -- whatever the requirements -- it is possible ... that the project could have succeeded". But DEP Director John Caffrey said Schwartz's claims "aren't factual." Environmentalists had voiced concerns that the mill would have required deforestation of much of the surrounding area and would have polluted the river and air with dioxin. Jason Huber, an attorney with the *OH Valley Environmental Council*, said the mill's "defeat" should warn other developers that similar projects "will encounter opposition". Sources: Ken Ward, *Charles-ton (WV) Gazette*, 12/18/97; *AP/Charleston (WV) Daily Mail*, 12/18/97; and *GREENWIRE, The Environmental News Daily*, 12/22/97

WY Oil Refinery - U.S. District Judge Clarence Brimmer in early January found *Amoco Corp.* responsible for groundwater and soil pollution from an abandoned oil refinery near Casper. The ruling requires *Amoco* to build an impermeable wall under the site to comply with USEPA mandates, but company officials say that a 33-million gallon underground "kerosene-like plume," which contaminated the North Platte River and surrounding properties, does not pose an immediate threat. Source: *AP/Casper (WY) Star-Tribune*, 1/12/98; and National Journal's *GREENWIRE, The Environmental News Daily*, 1/13/98

American Heritage Rivers Update

The White House announced in mid-December that it has received 124 nominations for Pres. Clinton's *American Heritage Rivers Initiative*. Although the nomination deadline had passed, "more suggestions were coming in." Clinton is expected to name the first 10 rivers for the program in January, once members of Congress in the affected districts are notified. But some observers say the competition is only for about five slots in the program because some "nationally renowned" rivers such as the Mississippi and Rio Grande are "shoo-ins for recognition".



Upper Mississippi River headwaters (MN).

Sen. John Chafee (R/RI) has been lobbying for the selection of RI's Blackstone and Woonasquatucket rivers. Community activists and government officials in the Washington, DC, area have nominated the Anacostia and Potomac rivers. On the 12/10 nomination deadline, NY Gov. George Pataki (R) nominated the Hudson River. In VA, 18 local governments, two Indian tribes and more than 24 nonprofit groups formally nominated the James River.

Meanwhile, four members of Congress have filed a lawsuit in a Washington, DC, federal court to block the Initiative which will provide funding

for economic development and environmental projects. Reps. Helen Chenoweth (R/ID), Don Young (R/AK), Richard Pombo (R/CA) and Bob Schaffer (R/CO) maintain that Clinton's executive order establishing the program violates the 10th Amendment, which leaves zoning powers to local authorities. Critics say that although the program, which seeks to designate 10 U.S. waterways for environmental projects and economic development, is voluntary, it is a federal intrusion into private property rights.

Also on the down side, Sen. Conrad Burns (R/MT) has formally asked the Clinton administration to exclude MT from participation in the program. Burns said he has encountered opposition from across his state, including from county, farm, realty and stockgrowers associations, but has received "fewer than 10" letters of support for the program. Rep. Joe Skeen (R/NM) said the Rio Grande in southern NM would not be named to the list because of his objections over water rights issues. Also, a committee representing ME environmental, citizens, industry and Native American groups on 12/8 decided not to nominate the Penobscot River for the program. Lou Horvath of the *ME Council of the Atlantic Salmon Federation* said improvement of the river should be done "without infringing on property rights and personal liberties". Also, the *St. Johns County Commission* on 12/9 withdrew its support of Jacksonville FL's nomination of the St. Johns River, saying the program could impinge on property rights.

Katie McGinty, President Clinton's top environmental adviser, has described herself as "bewildered and perplexed" by Republican opposition to the program. "This program is exactly the embodiment of the things we have heard from this Congress," she said in an interview with *The Associated Press* earlier this year. "It is 100% locally driven. It is government acting purely in partnership with local communities. It is complete nonregulatory."

Sources: *USA Today*, 12/1, 12/12 and 12/18/97; *AP/Boston Globe* online, 12/16/97; *AP/Billings Gazette*, 12/9 and 12/10/97; Mary Anne Legasse, *Bangor (ME) Daily News*,

12/9/97; *Washington Post*, 12/11 and 12/12/97; *AP/Boston Globe* online, 12/12/97; Peter Hardin, *Richmond Times-Dispatch*, 12/13/97; Steve Patterson, *Jacksonville Florida Times-Union* 12/10 and 12/12/97; Chenoweth press release; and *GREENWIRE, The Environmental News Daily*, 12/12, 12/15, and 12/18/97

Climate Change Treaty Approved

In what may be "the most ambitious and most controversial global environmental undertaking in history," delegates at the climate change conference in Kyoto, Japan, reached an "historic accord" to curb greenhouse gas emissions on 12/11. The treaty, if ratified, would require major industrialized nations to reduce emissions by 6-8% below 1990 levels by 2012. But delegates left "until next year the contentious issue of whether and how the world's poorer nations would participate" in emissions cutbacks.

The Kyoto Protocol would require the U.S. to cut its overall emissions of six gases by 7% below 1990 levels, while the European Union would have to reduce emissions by 8% and Japan would have to achieve a 6% cut. Twenty-one other industrialized nations would have similar binding targets. Australia would be allowed an 8% increase in emissions "because its economy is heavily dependent on its coal exports". A few other industrialized countries may be allowed increases, but globally, emissions would be reduced by 30% from the "levels currently projected for 2010" -- or by 5.2% from 1990 levels

Countries must sign the treaty by 3/99, "but there is no deadline for ratification". It would enter into force when 65 parties representing 55% of total carbon-dioxide (CO₂) emissions in 1990 have ratified it. Under the treaty, "expert review teams" would assess how nations are living up to commitments, but "no further sanctions are specified". "In a victory for the Clinton administration, the pact includes an endorsement of market-based mechanisms [to] encourage technological innovation and lower the cost of compliance." It includes a "clean development mechanism" under which industrialized na-

tions could invest in green technology in developing nations in exchange for emissions credits.

Reaction to the pact among environmentalists was generally positive, but mixed." The *Sierra Club* called it a "narrow victory," as did *Greenpeace*. But the *World Wildlife Fund* "blasted the agreement as flawed," and said it "plays into the hands" of the industries that fought against it." Meanwhile industry representatives had harsh words for the pact. William O'Keefe of the U.S.-industry-funded *Global Climate Coalition* said, "This agreement represents unilateral economic disarmament." He said that if Clinton signs the treaty, "business, labor and agriculture will campaign hard and will defeat it"

Hours before the final climate change accord was reached, Sen. Frank Murkowski (R/AK), chair of the *Energy and Natural Resources Committee*, said the accord would "be dead on arrival" in the Senate. Sen. Larry Craig (R/ID), head of the *Republican Policy Committee*, called on President Clinton to "promptly submit the treaty and allow the Senate to kill it". Faced with such opposition, Administration officials say Clinton will hold off submitting the treaty for Senate approval until changes can be made at a follow-up meeting [to Kyoto] in Buenos Aires where delegates will meet in 11/98 to address the issue of having developing nations participate in emissions reductions.

Senate Majority Leader Trent Lott (R/MS) on 12/11 "assailed" the administration's strategy, saying that the pact should not be withheld "for cynical, political reasons" and that "the president should have the strength of his convictions to submit this treaty as soon as possible". "By head counts from all quarters, the Senate is resoundingly opposed" to the treaty. According to a coal association executive, opponents can "count on almost all of the Senate's 55 Republicans [as well as] every Democrat from an energy-producing state" to vote against the pact, providing "a cushion well beyond the 34 votes" needed to block ratification.

Sen. John Kerry (D/MA), a "leading Democratic supporter" of a pact,

came out in favor of the delay approach. He "said a delay in formal approval of the treaty need not impede compliance with its goals, noting that the [U.S.] often has gone along with treaties before they were ratified". Senate Majority Leader Trent Lott (R/MS) said that the Senate would judge a climate treaty by five criteria: no erosion of U.S. sovereignty, no hidden taxes, no loss of American jobs, no disadvantage for American business and no special advantage for developing nations. Lott said, "The treaty under discussion appears to fail on all five counts".

The fight for ratification "will help define not only budget negotiations next year, but the 1998 Congressional elections and even the next presidential race". Additionally, the treaty "is likely to cast a pall of uncertainty over the U.S. and world economies for the next several months, and possibly even for years," according to economists both in favor and against the pact. Robert Repetto of the D C - b a s e d *World Resources Institute* said the decision to delay consideration of an international emissions- trading scheme until next year will keep businesses from "adjusting to the new order."

The coal industry "would be the biggest loser" as a result of the treaty, energy prices could rise "perhaps as much as 25-50% at retail," and energy-intensive industries such as steel, aluminum, chemicals and agriculture "would be especially hard hit." The pact "is expected to trigger a major shakeup" in the global automobile industry, where pollution controls "will likely expand the market for energy-efficient vehicles". Yale University economist William Nordhaus said the treaty could result in households paying an extra \$2,000 a year for energy and other products. "The total effect would be the same as a

tax increase of \$100-200 billion a year," according to Nordhaus.

Pres. Clinton on 12/11 repeated his belief that the treaty was "environmentally strong and economically sound." The president acknowledged that "a lot of challenges lie ahead" in persuading developing countries to participate in emissions-reductions efforts and in convincing the American public to buy into the treaty. He said further that "Every time we've tried to improve the American environment in the last 25 or 30 years, somebody has predicted that it would wreck the economy. And the air is cleaner. The water's cleaner. The food supply is safer. So don't believe the skeptics. Give us a chance to make the case"

Meanwhile, largely due to the weather phenomenon El Nino, 1997 was on average the hottest year on record, according to the *UN's World Meteorological Organization (WMO)*. In a statement to reporters, WMO spokesperson Eirah Gorre-Dale said reports from land- and sea-based monitoring stations worldwide indicated an average warming of 0.44 °C last year when compared to average temperatures between 1961 and 1990. The findings resemble conclusions released on 1/8 by the National Oceanic and Atmospheric Admin. researchers and other climate experts.



Also, "For the first time," biologists have found that excess ultraviolet (UV) rays from sunlight can kill amphibians, provoking renewed concern about the "thinning ozone layer." In a study published in *Proceedings of the National Academy of Sciences, Oregon State University (OSU)* researchers say that natural sunlight contains enough UVB radiation to kill most embryos of the long-toed salamander in lakes in the Cascade Mountains. The study is the "first to precisely measure the effects of UVB in a comparative study in nature." OSU biologist Andrew Blaustein said, "We were stunned by our findings. This is proof that excess UVB radiation in nature can cause death and deformity in this species." He said the study supports the theory that increased UVB rays have contributed to a worldwide decline in many amphibian species. But the USEPA's Gary Ankley noted that the OSU study focused on only one species and did not prove that

UVB rays are the cause of all amphibian declines.

In another climate-related study published on 11/28 in the journal *Science*, Wallace Broecker of *Columbia University* says that a change in water current circulation could stimulate severe winters in northern Europe, wiping out crops and fisheries in the region. Broecker called ocean currents that span across the globe, controlled by the temperature and salt content of the water, the "Achilles heel of the climate system." *Princeton University* climatologist J.D. Mahlman called Broecker's theory "interesting speculation," but said there was no immediate evidence indicating that a buildup of carbon dioxide emissions in the atmosphere could disrupt currents.

The recent discovery of an "unknown atmospheric source or reservoir" of nitrous oxide (N_2O) in the upper atmosphere could complicate efforts to understand global warming and ozone depletion, according to a study by two independent research groups in the 12/5 issue of *Science*. While N_2O "may be [known as] laughing gas at the dentist's office,...to atmospheric chemists there's nothing funny about it." The gas is "about 200 times as efficient as carbon dioxide at trapping heat radiation in the atmosphere." The largest known sources of N_2O -- emissions from soil and ocean bacteria, fertilizer decomposition, combustion and industrial processes -- contain "relatively little of the heavier isotopes of nitrogen and oxygen." However, scientists were surprised to discover an "abundance of heavy-isotope forms of N_2O " in the upper air while samples lower to the ground contained anticipated isotope ratios. Researcher Mark Thiemens of the *University of California* at San Diego said, "Something is going on in the atmosphere that no one has ever accounted for".

Meanwhile, a recent poll taken by the *New York Times* indicates strong support by the American public for a tough international treaty to combat global warming. Overall, the poll suggests that the public "rejects the main arguments" of industry groups against a treaty:

- Asked what the U.S. should do:

65% said the U.S. should take action to limit greenhouse gas emissions "regardless of what other countries do"; while 15% said the U.S. should wait until many countries agree how to address the problem together.

- Asked what the economic effects would be: 57% said the U.S. economy would become more competitive if the U.S. capped greenhouse gas emissions because efforts to use energy more efficiently would save money in the long run, while 17% said cutting emissions "will cost too much money and hurt the U.S. economy".
- Asked what about the causes of global warming: 49% said global warming is the result of emissions, while 16% said it results from normal climate fluctuations.
- Asked when serious effects from global warming might be expected: 13% said the warming would have no serious effect, 23% said they believed the impact was already serious, while 43% said the effects of warming would not be felt until the future.
- Asked what personal costs they would be willing to incur: 47% said they would be willing to invest in new energy-efficient appliances and insulation to cut emissions and save on utility bills, while 21% said they would not be willing.
- Asked how much they knew about global warming: 27% said they had heard or read a lot about global warming, 38% said they had heard or read "some" about it, while 33% said they knew "not much" or "nothing."

The poll, which was conducted from 11/23-24/97, surveyed 953 adults; the margin of error was +/- 3%.

Sixty-three percent of those surveyed by a *Newsweek* poll said they believe steps can be taken to "reduce the greenhouse effect" without hurting the U.S. economy. Twenty-four percent said such actions would necessarily hurt the economy. When asked what they would be willing to do to reduce greenhouse gas emissions, 82% said they would buy a more energy-efficient kitchen appliance even if it cost \$50 more, 74% said they would buy a more fuel-efficient vehicle even if it cost \$200 extra or made large sport utility vehicles prohibitively expensive, 74% also said they would pay one-half cent more per kilowatt-hour of electricity, and 51% said they would pay 12 cents more for

a gallon of gas. Fifty percent said they worry a great deal or a fair amount about global warming, down from 62% in a 1991 survey. This poll, which was conducted by *Princeton Survey Associates*, surveyed 752 adults from 11/13-14/97. The margin of error was +/- 4%.

In a *Harris Poll* 74% of those surveyed on their opinions about the climate change treaty said they approve of the pact, while 21% said they opposed it. Just 55% said they were aware of the Kyoto negotiations. Eighteen percent said the treaty was "too strict," 41% said it was "about right" and 31% said it was "not strict enough." Among partisans, 28% of Republicans said it was too strict, compared to only 8% of Democrats. The poll, conducted by *Louis Harris and Associates* from 12/11-15/97, surveyed 1,009 adults. The margin of error is +/- 3%.

Sources: Paul Recer, *AP/mult.* 11/28 and 12/9/97; *Reuters/Washington Times* 11/28/97; Leyla Boulton, *Financial Times* 11/28/97; Curt Suplee, *Washington Post*, 12/1 and 12/8/97; Warrick/Sullivan, *Washington Post*, 12/11/97; John Fialka, *Wall Street Journal*, 12/11/97; Maggie Farley, *Los Angeles Times*; William Stevens, *New York Times*, 12/11/97; Dewar/Sullivan, *Washington Post* 12/11/97; James Bennett, *New York Times*, 12/11/97; Pine/Fiore, *Los Angeles Times* 12/11/97; Christina Duff, *Wall Street Journal* 12/11/97; John Cushman, *New York Times*, 11/28/97; *Newsweek*, 12/8/97 issue; John Broder, *New York Times* 12/12/97; Laurie Kellman, *AP/San Francisco Chronicle/Examiner* online 12/12/97; Baker/Dewar, *Washington Post*; James Gerstenzang, *Los Angeles Times* 12/12/97; *Harris* release, 12/17/97; *Reuters/Baltimore Sun*, 1/21/97, and *GREENWIRE, The Environmental News Daily*, 12/1, 12/8, 12/9, 12/10, 12/11, 12/12 and 12/18/97; and 1/21/98

Strong Economy Lures Fishermen

A little jingle in the pocket puts anglers on the water. That is the gist of a study by the *American Sportfishing Association* (ASA), but what that means to fish hasn't been documented. In its study of the economic impact of

sport fishing in 1996, the ASA found a tremendous increase in the amount of money spent by fishermen in the past five years, by about the same number of anglers.

In 1991, ASA found 35,578,000 anglers 16 and older compared to 35,245,809 in 1996. "There is more disposable income now," research assistant Dan Strobel said. In 1991, those 35.6 million anglers spent \$27,608,829,700 in 511,329,000 days. By 1996, those numbers increased to \$37,797,062,032 spent in 625,892,832 days. "In 1991, nobody was spending any money, we were in the middle of a recession," Strobel said. "Now the economy is as strong as it has been in 70 or 80 years." And anglers are using the extra cash to spend more time fishing. That's a thought we like.

Source: Dale Bowman, 12/21/97,

Chicago Sun-Times

Riverkeepers - A Book

A review in *USA Today* hails a new book by leaders of the enviro group *Riverkeepers* as a "manual for activism." Entitled: *The Riverkeepers: Two Activists Fight to Reclaim Our Environment as a Basic Human Right*, the book is "a primer on how to reclaim a river."

Authors Robert Kennedy, Jr., chief prosecuting attorney for *Riverkeepers*, and John Cronin, a former commercial fisher and founding member of the group, have been a "thorn in many a corporate and government side" because of their efforts to combat water pollution. Begun in 1983 by Hudson River fishers as a "grass-roots effort to reclaim from polluters the waters that

gave them their livelihood," *Riverkeepers* has had so much success that 23 similar programs have been launched in waterways across the U.S.

Although Kennedy and Cronin say the nation's rivers are threatened by municipal sewage treatment facilities and power plants, the greatest threat is "greenwashing" -- a sophisticated effort by companies to formulate strategies for avoiding environmental responsibilities. Kennedy said, "It's very simple. It's the good guys against the bad guys." He adds, "One of the messages of the book is that if you're willing to put in the time and the effort and the money at home to defend your local environments, you can win".

Sources: Craig Wilson, *USA Today*, 1/8/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 1/8/98

Meetings of Interest

March 6-8: Freshwater Mussels Conservation, Captive Care, & Propagation, Columbus, OH. Contact: Doug Warmolt, Columbus Zoo, 9990 River side Drive, P.O. Box 400, Columbus, OH 43065, (614) 645-3400, email: dwarmolt@colszoo. org

March 9-10: Restoration Evaluation Criteria Workshop, San Diego, CA. Contact: Edith Read, SERCAL President, c/o Psomas and Associates, 3187 Redhill Avenue, Suite 250, Costa Mesa, CA, 92626, (714) 751-7373 ext. 2133, Fax: (714) 545-8883. Email: eread@ psomas. com.

March 16-19: 8th International Zebra Mussel and other Aquatic Nuisance Species Conference, Sacramento, CA. Contact: Elizabeth Muckle-Jeffs, (800) 868-8776 email: profedge@ renc.igs.net

March 17-21: 13th Annual U.S. Regional Association of the International Association for Landscape Ecology, Michigan State University, East Lansing, MI. Contact: <http://www.fw.msu.edu/iale98>, or William W. Taylor, Department of Fisheries and Wildlife, 13 Natural Resources Bldg., Michigan State University, East Lansing, MI

48824, (517) 355-1810, Fax: (517)432-1699, email: iale98@perm3. fw.msu.edu.

March 20-24: 63rd North American Wildlife and Natural Resources Conference, Orlando, FL. Session: Nonindigenous Species: Methods of Introduction and Impacts. Contact: Richard E. McCabe, Wildlife Management Institute, (202) 371-1808.

March 22-25: The Floodplain of the Future, 2nd Annual Conference on Natural Resources of the Missouri River Basin, Nebraska City, NE. Contact: Pam Haverland, USGS/BRD, Environmental & Contaminants Research Center, 4200 New Haven Road, Columbia, MO 65201, (573) 876-1841, FAX (573) 876-1896, E-mail: pamela_haverland@nbs.gov.

April 14-15: Lower Mississippi River Conservation Committee 5th Annual Meeting, Memphis, TN. Contact: Ron Nassar, LMRCC Coordinator (601) 629-6602.

April 15-17: Team Wetlands: 101 Ways to Win for Wetlands, Arlington VA. The American Wetlands Month Communities Celebration emphasizes interactive sessions on how to build

community wetlands programs and projects. Contact the Terrene Institute at (703) 548-5473; email: terinst@aol.com.

April 20-22: 11th International Trout Stream Habitat Improvement Workshop - Beyond traditional boundaries: Adding more environment to the equation, Fayetteville, AR. Contact: John Stark (870) 424-5924, arktrout@centuryinter.net or Don Duff (801) 524-6491, tudtrout@aol.com

April 23-24: Mississippi River Research Consortium, 30th Annual Meeting, Yacht Club Resorts, La Crosse, WI. Contact: Melinda Knutson, USGS, BRD, Upper Mississippi Science Center, 2630 Fanta Reed Road, La Crosse, WI 54602-0818, (608) 783-6451.

April 29-May 3: Rivers - The Future Frontier, Anchorage, AK. Contact the River Management Society at (406) 549-0514; email: rms@igc.apc.org

May 3-6: Watershed Management: Moving from Theory to Implementation, Denver, CO. Water Environment Federation. (703) 684-2400.

June 8-12: 19th Annual Meeting of the Society of Wetland Scientists, Anchorage, AK.

age, AK. Contact: Terry Brock, Box 22014, Juneau, AK 99802, (907) 586-7863, FAX (907) 586-7922, e-mail: tbrock@ptialaska.net or visit the SWS web page at <http://www.sws.org>

June 8-12: GCIP Mississippi River Hydrometeorology Conference "Predicting Climate Variability and its Implications for Water Resource Management. Regal Riverfront Hotel, St. Louis, MO.

June 23-28: First International Ictalurid Symposium - Catfish 2000 Davenport, IA. Contact Steve Eder, Missouri Dept. of Conservation, P.O. Box 180, Jefferson City, MO 65109-0180, (573) 751-4115, FAX (573) 526-4047.

August 23-27: 128th Annual Meeting of the American Fisheries Society, "Challenges for the New Millennium: Shaping the Future of Fisheries Science and the Fisheries Profession, Harford Civic Center, Hartford, CT.

Contact: Paul Brouha, (302) 897-8617, Ext. 209.

September ?: 88th Annual Meeting of the International Association of Fish and Wildlife Agencies. Contact: Georgia Department of Natural Resources.



1st International Ictalurid Symposium

Congressional Action Pertinent to the Mississippi River Basin

Agriculture

H.R. 2692, Bob Smith (R/OR.) to combine the Consolidated Farm Service Agency and the Natural Resources Conservation Service of the Agriculture Department as one agency and to ensure equitable treatment of socially disadvantaged farmers, ranchers and department employees.

Environment

H.R. 2818, Peter DeFazio (D/OR.) to repeal the pilot recreation fee program and establish a royalty on hardrock minerals and direct revenues to public recreational sites managed by the Interior Department and Forest Service.

Fish and Wildlife

S. 361 (Jeffords, R/VT) amends the Endangered Species Act to prohibit the sale, import, and export of products labeled as containing endangered species.

S. 491 (Ford, R/KY) to amend the National Wildlife Refuge System Administration Act of 1966 to prohibit the Fish and Wildlife Service from acquiring land to establish a refuge of the National Wildlife Refuge System unless at least 50% of the land owners in the proposed refuge favor the acquisition.

S. 751 (Shelby, R/AL) to protect and enhance sportsmen's opportunities and conservation of wildlife.

H.R. 374 (Young, R/AK) amends the Sikes Act to enhance fish and wildlife

conservation and natural resources management programs.

H.R. 1718 (Cunningham, R/CA) to protect and enhance sportsmen's opportunities and enhance wildlife conservation.

H.R. 2894, Wally Herger (R/CA) and Richard Pombo (R/CA) to amend the Endangered Species Act of 1973 enabling federal agencies responsible for the preservation of threatened and endangered species to rescue and relocate members of any of those species that would be taken in the course of certain reconstruction, maintenance or repair of federal or non-federal man-made flood control levees.

H.R. 2911, Wally Herger (R/CA) and Richard Pombo (R/CA) to amend the Endangered Species Act improving the ability of individuals and local, state and federal agencies to prevent natural flood disasters.

Flood Insurance

H.R. 230 (McCollum, R/FL) to ensure that insurance against the risk of catastrophic natural disasters, such as hurricanes, earthquakes, floods, and volcanic eruptions, is available and affordable, and to provide for expanded hazard mitigation and relief.

Forests

S. 977 (Robert Torricelli, D/NJ) and John Kerry, D/MA) to amend the Forest and Rangeland Renewable Resources Planning Act of 1974 to ban clear-cutting and strengthen preserva-

tion on federal lands, and designate ancient forests, roadless and other areas where no logging may occur.

S. 1058 (Richard Durbin, D/IL) to amend the National Forest Management Act of 1976 to ban timber sales where the cost of making timber available for the sale is greater than the expected revenues from the sale in the Shawnee National Forest in IL.

S. 1253, Larry Craig (A/ID) to streamline the forestry decision-making process in the Bureau of Land Management and Forest Service with a multi-use outlook.

S. 1254, Larry Craig (A/ID) to outline a process by which states could take over the management of federal lands for 10-year periods with Congress' approval.

H.R. 101 (Baber, R/LA) amends the National Forest Foundation Act to extend and increase the matching funds authorization for the foundation, to provide additional administrative support to the foundation, to authorize the use of investment income, and to permit the foundation to license the use of trademarks, trade names, and other such devices to advertise that a person is an official sponsor or supporter of the Forest Service or the National Forest System.

H.R. 1376 (Eshoo, D/CA) to amend the Forest and Rangeland Renewable Resources Planning Act of 1974 and related laws to strengthen the protection of biodiversity and ban clearcutting on federal lands and to designate certain federal lands as Northwest Ancient

Forests, roadless areas, and special areas, where logging and other intrusive activities are prohibited.

H.R. 1861 (Hinchey, D/NY) amends the Forest and Rangeland Renewable Resources Planning Act of 1974, the Federal Land Policy and Management Act of 1976, the National Wildlife Refuge System Administration Act of 1966, the National Indian Forest Resources Management Act, and title 10 of the U.S. Code to strengthen the protection of native biodiversity and to place restraints upon clearcutting and certain other cutting practices on U.S. forests.

H.R. 2458 (Helen Chenoweth, R/ID) to authorize the Agriculture and Interior secretaries to remove forest floor overgrowth and conduct other management practices where federal lands abut urban areas.

H.R. 2789, Cynthia McKinney (D/GA) to eliminate commercial logging on federal lands and facilitate economic recovery and diversification of communities dependent on logging.

Grazing

H.R. 547 (Nader, D/NY) requires the Interior and Agriculture secretaries to establish grazing fees at fair market value for use of public grazing lands.

H.R. 2493 (Bob Smith, R/OR) the Forage Improvement Act of 1997, to make "moderate" changes to grazing regulations, such as setting a formula for fees at \$1.84 per adult head of cattle per month, up from the current amount of \$1.35. The bill also would guarantee lease renewal after 10 years if ranchers have followed all lease terms, and it would codify the structure and duties of **Resource Advisory Councils**, which give the federal government advice on managing federal lands. Approved by the House on October 30.

Land Acquisition

H.R. 1487 (Campbell, R/CA) to provide off-budget treatment for one-half of the receipts and disbursements of the Land and Water Conservation Fund, and to provide that the amount appropriated from the fund for a fiscal year for federal purposes may not

exceed the amount appropriated for that fiscal year for financial assistance to the states for state purposes.

H.R. 1732 (Kildee, D/MI) to amend the Land and Water Conservation Fund Act of 1965 to provide for off budget treatment of the receipts and disbursements of the land and water conservation fund and the accounts established under that act.

Mining

S. 325, S. 326, and S. 327 (Bumpers, D/AR) to repeal the percentage depletion allowance for certain hardrock mines, provide for the reclamation of abandoned hard-rock mines, and ensure federal taxpayers receive a fair return for the extraction of locatable minerals on public domain lands, respectively.

H.R. 2945, John Duncan (R/TN) and Jim Hansen (A/UT) to amend the Land and Water Conservation Fund to establish a Community Recreation and Conservation Endowment with certain escrowed oil and gas revenues.

Parks

S. 991 (Frank Murkowski A/AK) to make technical-changes to **Omnibus Parks and Public Lands Management Act of 1996**.

H.R. 104 (Bartlett, R/MD) authorizes the private ownership and use of National Park System lands.

H.R. 901 (Young, R/AK) to preserve the sovereignty of the U.S. over public lands by requiring that United Nations heritage designations be subject to congressional approval. Approved by the House on October 8.

H.R. 2143 (Miller D/CA) to provide certain escrowed oil and gas revenues be available to improve national parks' visitors facilities.

Public Lands

S. 477 (Hatch, R-UT) amends the Antiquities Act to require an Act of Congress and the consultation with the governor and state legislature prior to establishment by the president of national monuments in excess of 5,000 acres.

S. 691 (Murkowski, R/AK), to require public review and the authorization of Congress for any presidential designations of national monuments, biosphere reserves, and world heritage sites on public lands.

S. 1118 (Frank Murkowski, A/AK) to set up a Community Recreation and Conservation Endowment of \$800 million for the state side portion of the Land and Water Conservation Fund from oil and gas revenues.

S. 1176 (Craig Thomas, R/WY) to elevate the role of local and state governments under the **National Environmental Policy Act**. NEPA outlines the review process the federal government must follow before taking major actions on federal lands. Environmentalists in general oppose the measure for placing local governments above other residents and groups.

H.R. 919 (Miller, D/CA) establishes fair market value pricing of federal natural assets, and for other purposes.

H.R. 2223 (J.D. Hayworth (R/AZ) To amend the Recreation and Public Purposes Act to allow the conveyance of public land and forests to local education agencies for elementary, secondary and charter school use.

H.R. 2502 (John Duncan, R/TN and Bill Jenkins, R/TN) to amend the Land and Water Conservation Fund Act of 1965 to allow national park units that cannot charge entrance fees to retain other fees.

H.R. 2223, J.D. Hayworth (R/AZ) to amend the Recreation and Public Purposes Act to allow the conveyance of public land and forests to local education agencies for elementary, secondary and charter school use.

Refuges

H.R. 511 (Young, R/AK) to amend the National Wildlife Refuge System Administration Act of 1966 to improve the management of the refuge system.

H.R. 512 (Young, R/AK) to prohibit the expenditure of funds from the Land and Water Conservation Fund to create new National Wildlife Refuges without specific authorization from Congress. Passed by the House Resources Com-

mittee. Opposed by the President.

Takings

S. 709 (Hager, R/NE) to protect private property rights guaranteed by the fifth amendment to the Constitution by requiring federal agencies to prepare **private property taking impact analyses** and by allowing expanded access to federal courts.

S. 781 (Hatch, R/UT) to establish a uniform and efficient federal process for protecting property owners' rights under the fifth amendment.

Water and Wetlands

H.R. 128 (Crapo, R/ID) to preserve the authority of the states over waters within their boundaries, and to delegate the authority of the Con-

gress to the states to regulate water.

H.R. 227 (McCollum, R/FL) directs the Secretary of the Army to conduct a study of mitigation banks.

H.R. 238 (Robert Menendez D/NJ) to amend the **Oil Pollution Act of 1990** to make the act more effective in preventing oil pollution in the nation's waters through enhanced prevention of, and improved response to oil spills, and to ensure that citizens and communities injured by oil spills are promptly and fully compensated, and for other purposes.

H.R. 550 (Oberstar, D/MN), **NonPoint Source Water Pollution Prevention Act of 1997** amends the **Clean Water Act** to establish requirements and provide assistance to prevent nonpoint sources of water pollution, and for other

purposes.

H.R. 640 (Hostettler, R/IN) amends the wetland conservation provisions of the **Food Security Act of 1985** and the **Clean Water Act** to permit the unimpeded use of privately owned crop range and pasture land that have been used for the planting of crops or the grazing of corn in a least 5 of the preceding 10 years.

H.R. 2556, Jim Saxton (R/NJ) to reauthorize the **North American Wetlands Conservation Act** and the **Partnerships for Wildlife Act**.

Sources: Land Letter, STATUS REPORT, Vol.16, No. 2,5,8,11,13 17, 20, 25, and 26; and NOAA Legislative Informer, 3/97, Issue



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River Crossings

NATIONAL RIVER POLICY

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Heritage Rivers Suit Dismissed

A federal judge in Washington, D.C. on 3/4/98 dismissed a lawsuit filed by House Resources Committee Chair Don Young (R/AK), Rep. Helen Chenoweth (R/ID) and other GOP committee members intended to halt President Clinton's *American Heritage Rivers* (AHR) program.

The lawsuit alleged that Clinton's executive order establishing the river protection initiative violates the 10th Amendment, which leaves zoning powers to local authorities, and constitutes a federal intrusion into private property rights. Arguing that Clinton should have submitted the program's proposal for congressional approval instead of implementing it by executive order, the legislators filed the suit after the House Resources Committee failed to pass legislation that would have blocked the initiative.

U.S. District Judge Henry Kennedy said Young and the others did not have standing to file the lawsuit because their rights were not harmed by the program. Tom Cassidy of the conservation group *American Rivers* praised the decision saying, "Chairman Young and Rep. Chenoweth know they can't stop this popular program in the Congress. And now they have failed to stop it in the courts. The winners are the

communities across the country that want to restore and revitalize [their] rivers." William Pendley, director of the Denver-based *Mountain States Legal Foundation* that argued the case, said he plans to appeal.



Meanwhile, the chair of the House Commerce Committee has joined the list of lawmakers opposed to the AHR program. Rep. Thomas Bliley (R-VA) voiced his opposition to designation of

Virginia's James River in a letter sent to the White House Council on Environmental Quality (CEQ). Bliley said he was concerned that the program would interfere with private property rights and decisions made by local officials. A CEQ spokesperson said Bliley's opposition "clearly weakens" the James River nomination, but added that the river will still be considered, with the section of river in Bliley's congressional district removed.

Oregon Sen. Gordon Smith is also urging President Clinton to keep the Willamette River and sections of the Columbia River out of the program, and Rep. Barbara Cubin (R/WY) has asked that her state be left out of the initiative. Cubin in a letter to CEQ Chair Kathleen McGinty said, "I believe the

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states and local citizens know best how to manage the waters within their borders".

Also support from the Illinois congressional delegation appears to have "softened considerably." All 22 members of the state's delegation, plus Lt. Gov. Bob Kustra (R) and Chicago Mayor Richard Daley (D), initially supported inclusion of the Illinois River in the program. But "most" southern Illinois reps now oppose the move, according to an aide to one GOPer. The *Illinois Farm Bureau* and several counties oppose it as well.

Meanwhile, progress is being made on the AHR designations. A Federal Review Panel (FRP) concluded its work on 12/18/98, and a White House Panel (WHP) will take the work of the FRP and recommend up to 20 rivers for designation. President Clinton will choose 10 from that list, with the selected rivers most likely being regionally diverse.

Within 90 days of designation, participating federal agencies at the local level and members of the local river community are to have drafted and signed a framework document that essentially identifies the roles and commitments of federal and local entities -- basically a partnership agreement between federal agencies, community partners, and others. Because each river and its priorities are different, each framework document will be different. Nevertheless, each will likely include the following:

- terms of agreement (background, reinventing government, existing plans, charter & mission statement);
- partnership organization (organizing structure, lead federal agency(s), river navigator roles, support for river navigator, communication and performance); and
- key officials.

In some instances the framework document will likely include specific project descriptions and objectives.

The AHR Program, through federal agencies, will provide a professional, experienced facilitator to each of the ten designated rivers. The facilitator:

- will take responsibility for coordinating the relevant parties, and ensuring that the framework document is

completed in a timely manner,

- will remain neutral,
- will not contribute to the content of the framework document, and
- will work closely with the local community convener, the federal agencies, and the AHR steering committee in doing so.

A total of 126 rivers or river reaches have been nominated nationwide. Nominated rivers within the Mississippi River Basin rivers include the following (where two states are listed, sponsors in both states nominated the same or different reaches):

- Allegheny (NY, PA)
- Arkansas (AR, CO, KS, OK)
- Cedar (IA)
- Chicago-Illinois (IL)
- Cumberland (TN)
- Fox (WI)
- French Broad (NC, TN)
- Great Miami (OH)
- Kanawha (WV)
- Kaskaskia (IL)

- Levisa (VA)
- Licking (KY)
- Lower Mississippi (LA)
- Mahoning (OH)
- Mill (OH)
- Minnesota (MN)
- Mississippi River in Dubuque (IL, IA, WI)
- Mississippi River in Memphis (TN)
- Missouri (IA, KS, MO, MT, NE, ND, SD)
- Muskingum (OH)
- New (NC, VA, WV)
- Ohio (IL, IN, PA, KY, OH, WV)
- Ohio-Pigeon Creek (IN)
- Ouachita (AR, LA)
- Rock (WI)
- South Platte (CO)
- Tennessee in Chattanooga and in Decatur County (TN)
- Upper Mississippi (IL, MN, MO, WI)
- Upper Mississippi in St. Paul (MN)
- Yellowstone (MT, ND)

The following nine nominations are out of contention due to opposition by a

River Crossings

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River Crossings is a mechanism for communication, information transfer, and coordination between agencies, groups and persons responsible for and/or interested in preserving and protecting the aquatic resources of the Mississippi River Drainage Basin through improved communication and management. Information provided by the newsletter, or opinions expressed in it by contributing authors are provided in the spirit of "open communication", and do not necessarily reflect the position of MICRA or any of its member States or Entities. Any comments related to "River Crossings" should be directed to the MICRA Chairman.

local Congressional member (or members) whose district(s) surround the nominated areas:

- Coldwater Creek (MO),
- Gunnison (CO),
- Snonomish (WA),
- San Joaquin (CA)
- Upper Rio Grande (NM),
- San Juan (NM)
- Clearwater (MT),
- St. Mary's (MI), and
- Osage (MO).

These communities will receive a notice from the CEQ on this subject.

The USGS has prepared digitized maps of the nominated rivers with congressional overlays. These will be combined with EPA watershed water quality data, enabling the AHR website to provide detailed water quality information for different sections of each river. The website is located at www.epa.gov/rivers

Sources: David Whitney, *Anchorage Daily News*, 3/5/98; Peter Hardin, *Richmond Times-Dispatch*, 1/27/98; *AP/Casper [WY] Star-Tribune*, 1/20; *USA Today*, 1/27/98; Ethan Wallison, *Chicago Tribune*, 1/25; and National Journal's *GREENWIRE*, *The Environmental News Daily*, 1/27 and 3/5/98

Indiana Responds to Paddlefish Caviar Concerns

A daily bag limit of two paddlefish is now in effect for the Ohio River sport harvest of Indiana anglers. The emergency rule signed into effect on 3/10/98 is aimed at stopping the illegal sale of paddlefish taken by sport fishermen. Paddlefish, large filter-feeding fish, are seldom caught by conventional angling methods. Instead, sport fishermen are allowed to snag them from the Ohio River during a February 1 to May 10 snagging season.

Under Indiana law, anglers cannot sell any fish taken by sport fishing methods. However, the value of paddlefish eggs for the caviar market has risen dramatically as a result of world-wide shortages of sturgeon -- the traditional caviar source. This has encouraged the illegal sale of paddlefish taken by sport fishermen. "Our intent is to keep sport fishing a recreational pursuit," said Gary

Doxtater, Director of the Indiana Dept. of Natural Resources, Division of Fish and Wildlife (DNR/DFW). "The bag limit removes the incentive to misuse sport fishing for commercial sale purposes." Indiana, under commercial fishing licenses issued for the Ohio River, continues to allow paddlefish to be taken with nets and sold.

Biologists in Indiana and 21 other Mississippi River Basin states are concerned about the growing harvest pressure on paddlefish for the caviar trade. A multi-state research project is underway through MICRA to learn more about the movements and harvest of paddlefish. Miniature Coded Wire Tags (CWTs) are being used to mark paddlefish captured and released by fishermen. "Much more needs to be known about this unique fish," said Bill James, Chief of Fisheries for the Indiana DNR/DFW. "At present the paddlefish population in our portion of the Ohio River appears to be holding up, but we want to ensure that over harvest does not threaten the paddlefish's future."



Tom Stefanavage Indiana DNR/DFW injecting paddlefish with MICRA's CWT.

The emergency rule mirrors a proposed fish and wildlife permanent rule that is nearing final adoption. The permanent rule was presented at public hearings around the state in late January. Under normal rule promulgation, such changes won't go into effect until late summer. This would be too late to address the 1998 paddlefish snagging season, so the DNR took emergency rule action. The emergency rule:

- prohibits the taking of paddlefish from any public water except the Ohio River,
- sets a daily bag limit of two paddlefish,
- prohibits sorting or release of lawfully snagged paddlefish,
- requires that anglers cease snagging for the day after two paddlefish are taken, and
- prohibits snagging within 200 yards of a dam on the Ohio River.

The prohibition near dams is already in effect in Kentucky and will standardize this regulation between the two states.

Contact: Jeff Wells, Law Enforcement, (317) 232-4010 or Mark Cottingham, Fish and Wildlife (317) 232-4080, Indiana DNR, 402 W. Washington St. W255, Indianapolis, IN 46204-2748

House/Senate Consider ESA

Reform of the Endangered Species Act (ESA) is high on the agenda for both the House and the Senate in the second session of the 105th Congress which began in late January. The Senate has been leading the way with its bipartisan proposal, S.1180, that is expected to be one of the first bills to be sent to the Senate floor. While the House Resources Committee plans oversight hearings, it is currently unclear whether the House will introduce its own ESA reform legislation or choose to pick up on the Senate bill and offer amendments, an option which several sources on and off the Hill say is more likely.

S. 1180 makes what its supporters say are very aggressive attempts to revamp the ESA's recovery system and put an effective recovery program in place. But most environmentalists disagree with that assertion and claim the bill will do just the opposite, slowing down efforts to get species removed from threatened or endangered status. Conservative opponents of the bill see other problems, saying the bill's flaws lie in its omission of forceful new language on issues such as property rights and water rights which are expected to appear in amendments in both the Senate and the House.

Since over half of the species listed as endangered reside on private property, ESA enforcement often impinges on

property owners, and several Western senators feel that stronger language on property rights is needed in S. 1180. Sen. Dirk Kempthorne (R/ID), the sponsor of S. 1180, has said he would work on compromise language for such a floor amendment.

The more difficult water rights issue deals with balancing state water use decisions with conservation management requirements. This is a big concern mostly to Western states. The controversial issue is not addressed in S. 1180 because, Kempthorne explained, "It seemed far better to leave the water rights issue status quo."

Congressional and stakeholder sources predict that contentious amendments on issues like property rights and water rights may receive more attention and see a bigger fight when the ESA is taken up in the House.

Despite certain complaints about the bill, S. 1180 has fairly broad support in the Senate and has also won the critical approval of the Clinton Administration, which was involved in negotiations to draft the bill. S 1180 was introduced on 9/16/98 by four key senators on the Environment and Public Works Committee. They include Committee Chairman John Chafee (R/RI), Endangered Species Subcommittee Chairman Kempthorne, Committee ranking Democrat Max Baucus (MT) and Endangered Species Subcommittee ranking Democrat Harry Reid (NV), with Department of Interior Secretary Bruce Babbitt by their side to lend the Administration's support.

The bill's recovery planning and implementation process would require:

- publishing of a draft recovery plan for newly listed species within 18 months of a final listing decision;
- publishing of a final plan within 30 months of the listing; and
- plans for those species already



listed, but which do not have recovery plans, would be completed within 60 months of the bill's enactment, with half of those to be completed within 36 months.

The bill also makes changes to the ESA's consultation section which currently gives the Fish and Wildlife Service (FWS) primary authority to make determinations on whether a federal project will impact endangered species. Under S. 1180, other federal agencies can make the determination, although the FWS would retain the right to weigh in on the determination, but would be required to do so within a 60-day window.

Section V of S. 1180 concerns Habitat Conservation Plans (HCPs) on private property and sets up a "streamlined" program whereby landowners can develop programs with the Dept. Of the Interior (DOI) even for multiple species HCPs. The bill also codifies "*safe harbor agreements*", which are opposed by several environmental groups but widely supported by landowners. Safe harbor agreements say that if a landowner enters into a voluntary agreement with DOI to protect and conserve listed species, those landowners and their HCPs in return would not be subject to additional liability under ESA. They are therefore intended to encourage voluntary steps to preserve species and their habitats.

Section VIII of S. 1180, which sets authorization of appropriations for the new act, calls for the FWS and the National Marine Fisheries Service to have their allocation approximately doubled by the year 2000 to \$165 million and \$70 million, respectively, to carry out their new responsibilities. However, that funding level is not guaranteed and may or may not be maintained during independent and annual appropriations votes. Because the bill contains a host of new requirements on FWS, especially with new deadlines for recovery planning, concern has been raised among FWS employees and other interested parties about how the FWS would be able to carry out their new responsibilities without assured funding, an issue which may arise during Senate floor debates.

Source: *Land Letter* 1/29/98, Vol. 17, No. 2

"No Surprises" Rule Issued

The U.S. Dept. of Interior (DOI) recently codified its "*no surprises policy*" into a rule and at the same time announced a five-point policy initiative to improve habitat conservation planning. The no surprises policy would also be codified legislatively under S. 1180 (discussed above).

This regulatory action comes as a result of ongoing litigation initiated by several environmental groups in which DOI agreed to conduct a formal rulemaking process for the no surprises policy and hold a public comment period. The policy has been in use since 1994, but was issued as a policy, not a rule.

Under no surprises, if landowners and federal officials agree to a Habitat Conservation Plan (HCP) and the plan is adhered to, the federal government would not require additional land, water or financial resources from the landowner for the duration of the HCP, so long as the plan proves itself to be adequate or unusual circumstances do not arise.

Endangered species protection and private property owners' concerns are very intertwined because DOI estimates that over 80% of the nation's endangered species reside on private property. DOI Secretary Bruce Babbitt said on 2/17/98 when the rule was made final that the no surprises policy evolved from the need to reconcile the expectations of private property owners and accommodate their needs with the necessity to recover listed species. Otherwise, Babbitt explained, property owners would face a threat because "a listing could cast a freeze over the entire landscape because of the possibility of a take."

Under the Endangered Species Act, if a landowner develops or alters property in a way that might effect an endangered or threatened species or its habitat, a permit is required to allow for an incidental take. In order to shield oneself from a take, a landowner can voluntarily agree to mitigate or minimize impacts on threatened species in exchange for liability relief, which was

exactly the intent of the no surprises policy. The no surprises agreements are characterized as "enormously successful" by Babbitt who said the agreements have "blossomed" over the past five years with over 200 being signed and with HCPs now applying to over 5 million acres of private land.

Most environmental groups, however, are strongly opposed to such agreements on the basis that landowners will get locked into an advantageous agreement that cannot be easily modified. But Babbitt said that the typical HCP specifically defines what would trigger adaptive management principles to kick in if the plan is not adequate or if circumstances change. Also, Babbitt said federal land purchases could be made through the Land and Water Conservation Fund if science changes or circumstances affecting the HCP set in.

In order to ameliorate HCPs, DOI is embarking on a policy initiative focusing on using better science, stepping up monitoring efforts, perfecting adaptive management provisions and expanding public participation. DOI said it will release more information on the initiative within the next three months.

Source: *Land Letter*, 2/26/98, Vol. 17, No. 5

Habitat Conservation Plans May Threaten Species

Habitat Conservation Plans (HCPs) are potentially "powerful tools" used to protect species under the Endangered Species Act (ESA), but they can lead to the destruction of habitat and wildlife when they are not implemented properly, according to a *Defenders of Wildlife* (DOW) report released on 2/10/98. The report is the first to critique many HCPs, legally binding agreements under which landowners adopt certain conservation measures in exchange for permission from the federal government to develop property, even if some endangered species and habitat are destroyed in the process.

The report, which assessed 24 of the 225 HCPs now in place under the

ESA, credits some plans with "holding promise" if they are fully funded and implemented. But the report found that "in many cases [the plans] are being approved without adequate scientific information or public input." The researchers conclude that provisions in the plans for long-term biological monitoring, "if they exist at all, are weak." And none of the HCPs reviewed provided for additional funds in the event that subsequent data indicates the need for more conservation measures.

Author Laura Hood, in the report said, "The federal government is putting species on Noah's Ark with a blind captain and no way to repair the vessel when holes appear." "Many" of the problems identified in the report "would be cemented into law" under S.1180 proposed by Sen. Dirk Kempthorne (R/ID), according Kim Delfino of the *US Public Interest Research Group (USPIRG)*.

Backed by a coalition of groups including the *Sierra Club* and *USPIRG*, the report recommends that the HCP process be opened to more independent scientific review and allow greater public input. The authors recommend that landowners be required to post bonds or other security in case additional conservation measures become necessary. And the authors said better enforcement of existing ESA prohibitions against destroying listed species and habitat would encourage landowners to develop HCPs.

Sources: James Bruggers, *Walnut Creek [CA] Contra Costa Times*, 2/11/98, DoW/USPIRG release, 2/10/98; and *National Journal's GREENWIRE, The Environmental News Daily*, 2/12/98

Topeka Shiner Editorial

The following editorial by Bill Hayden appeared in the *Columbia (MO) TRIBUNE* on 1/30/98. We thought it worthy of repeating for our readers.

"The Endangered Species Act is a remarkable document. It is a statutory verification of the respect for life held by the American people. In its rather arcane and stilted legal phrases, it sets out the processes for identifying and

protecting those life forms with which we share the planet.

'But, some folks just don't get it. They think that the sun rises and sets on human ambitions and that nothing should get in the way of us doing whatever we want with this remarkable planet.

'Several decades ago, a new branch of biological studies was created: ecology, it was labeled. It set out a premise that had long been recognized by naturalists and theologians. There is a Web of Life. All things are connected. It is impossible to pick out one species and study it without taking into account everything that surrounds it.

'That also applies to human beings. We are an integral part of that web. What effects our surroundings effects us. If we diminish the plants and animals that inhabit our planet, we also diminish the quality of our lives.

'The religious community has very deep feelings about this. Everything was created by God, and all things are therefore sacred. The earth is not ours; we were placed here as good stewards -- to care for what God has created. In this theology, the web of life is a sacred principle, and all creatures have intrinsic values. All life is valued because all life is sacred.

'Now listen to what a leader in the *Missouri Farm Bureau* has to say about the eminent extinction of species: "It is just BAIT - if it has no value, what does it matter? Some other minnow will take its place."

'These statements - and others equally disrespectful - were made at a hearing this week on the proposed listing of the Topeka Shiner as an endangered species. The *Missouri Farm Bureau* and the *Cattlemen's Association* showed up to present statements in opposition to the listing. They never gave any evidence that would show that the Shiner is not in danger of extinction. They did give much evidence of their lack of concern about the natural world. At least they are consistent. These organizations have opposed the listing of almost every species in danger of being destroyed, from the wolf to the Indiana Bat.

'Fortunately, these agri-business organizations did not represent the feelings of real farmers who showed up at the meeting and expressed their deeply-felt opinions about taking care of the earth. A majority of the local landowners -- the hearing was in Bethany, about 80 miles northwest of Columbia -- stated that they understood that some farming practices may have degraded local streams. They stated that they wanted their streams protected, they valued clean water, they respected the gift of good land and they supported the listing of the Shiner. They also denounced the *Farm Bureau* and the *Cattlemen's Association*, and stated in no uncertain terms that those organizations' statements did NOT represent their opinions.

'One farmer went a little further. He stated that industrial style agriculture and agri-corporations were responsible for the decline of water quality and the accompanying demise of the rural way of life. He wondered why the *Farm Bureau* was supporting agri-corporations instead of family farmers. He understood perfectly the thesis that all things are connected.

'All of this, of course, was a sideline to the real purpose of the hearing which was to gather information on the decline of the Topeka Shiner, and to determine whether it should be listed as an endangered species and afforded the protection of the U.S. government. All evidence presented by fisheries biologists and other scientists was not refuted. The Topeka Shiner has disappeared from most streams that it once inhabited, and has declined by 80% across its range. The current populations continue to diminish. This species once was found in all streams of Boone County; it now is found, in ever-declining numbers, only in the Bonne Femme watersheds of the Three Creeks Conservation Area. Similar situations exist in Kansas, Iowa, Nebraska, South Dakota and Minnesota.

'The causes of the threatened extinction of this small fish are varied and several. It has evolved over millions of years in free-flowing, clear, cool, shaded prairie streams. From the tallgrass streams of Kansas' Flint Hills

to the sycamore lined creeks of Missouri, this species found a niche. But evolution did not prepare it for us. We damned headwater creeks for livestock watering, we eliminated streamside vegetation, we allowed erosion and pesticides to run off into the streams. We destroyed the aquatic habitat of this fellow creature.

'Now, our mistakes have been manifested. The problems are recognized, and the solutions are available. But there are those who get stuck in the way things are done, and think that is the way things must be. We, however, are adaptable. We can change. And we should change, when it is demonstrated that what we are doing is destroying life.

'And that is what scares the agri-business organizations. They want change to be dictated by profits, not by concerns about some silly little useless piece of bait. The usual scare stories, based on half-truths and fabrications were hauled out. But the truth is this: not one farmer in Missouri has gone out of business or lost any land because of environmental regulations or the Endangered Species Act. Not one. Changing techniques does not translate as an invasion of landowners rights. Such change does recognize that landowners have stewardship responsibilities.



"Topeka shiner"

'Yes, the Topeka Shiner can be used as "bait". Yes, it can be viewed as just a "food source" for larger fish. In the end, I suppose, everything is just bait. Including us. But, somehow, I would prefer to view life as a bit more intricate and involved -- a bit more sacred -- than treating everything and everyone as only valuable for nutritional content.'

A Plea For Wilderness

This commentary by Rick Bass, Yaak, MT appeared in the *Chicago Tribune*

on 3/5/98. It is also worth a read.

"In my valley, the comparisons to Noah's Ark are inescapable. It's 97 percent public land--Montana's Yaak Valley--the wildest valley I know of in the Lower 48, where the last animal to go extinct, as far as I can tell, was the



mastodon. Everything else is still here: grizzly bear, gray wolf, pileated woodpecker, lynx, great gray owl, wolverines, marten--even an occasional woodland caribou, looking exactly like some reindeer down from Alaska, except he's not lost--this is his country. Rare species of trout, salamanders, frogs, ferns, orchids--this wet valley is a unique mix of the Pacific Northwest and the northern Rockies. People who live in the valley often use the word magic to describe this place, and I think that surely one of the characteristics of magic is an abundance and diversity of life. The quiet green hills, often cloaked in mist--Yaak is sometimes referred to as "Montana's only rain forest"--exude a calming sense of majesty and health. Giant cedars tower along clear-running creeks. What is rare elsewhere in the world is common in Yaak.

'Nothing has gone extinct here, but that is where the comparisons to the ark come in. So many of the threatened, endangered and sensitive species are down to single- or double-digit populations, whittled down to history's hard edge by decades of heavy road building and, in some instances, overlogging of the public lands. Fifteen grizzlies--only two known breeding-age females. Five or six wolves. A handful of wolverine. A dozen mated pair of adult bull trout.

One population of the inland redband trout, a kind of landlocked salmon. That one caribou, now and again. (He cruises back and forth across the border). You'd be hard-pressed to find two of everything for some of these species.

'And yet that is the U.S. Fish and Wildlife Service's job, and it is what nearly everyone in our country wants. Eighty-four percent of Americans want the Endangered Species Act to be retained as it now stands, or strengthened, but one of the senators from my own state, Democrat Max Baucus, as well as Sens. Dirk Kempthorne (R/ID) and John Chafee (R/RI) are presenting to Congress a bill, S 1180, which would weaken the Endangered Species Act.

'I am concerned about what this bill's passage could mean for my beloved Yaak, and for other wild and unique places in this country, and for the individual species that inhabit those places. The thing I find most shameful about the bill is that it would prohibit the general public from attending meetings of consultation between the federal agencies involved in activities affecting endangered species and the extractive industries lobbying for those various activities. We would be shut out of meetings affecting the management of our lands. I am not used to this. I am accustomed to attending those sorts of meetings. They are often long and tedious, but they are an essential part of democracy, and vital to preserving, or recovering, healthy populations.

'Another aspect of the proposed bill would let landowners "lock in" to Habitat Conservation Plans that would exempt them from any conservation obligations for up to 100 years, regardless of changing conditions or science. Imagine working in 1997, for example, with science from the turn of the last century!

'I appreciate Sen. Baucus' involvement with this issue, when our state of Montana contains many of the nation's threatened and endangered species, but I worry greatly about the message this bill gives to industry in places like the Yaak and elsewhere. I don't see that the Endangered Species Act has altered my valley's way

of doing business. Technological "labor-saving" advances, yes, and the volatility of raw commodity prices and demand fluctuations in Asia, and the market-flooding of Canadian timber, yes--more so than endangered species legislation. A million logging trucks have rolled out of my valley so far--often carrying logs to be shipped to Asia and Europe--and if we had been more prudent with those logs, I think everyone agrees there'd be more money in the community than there is now. I don't want the logging culture of this place to be lost--it is as much an element of this landscape as the misty river bottoms and the heavy-antlered moose and giant larch trees--but I understand that with only 3.9 percent of the nation's timber supply coming from places such as the Yaak, we are nothing more to the national economy than a single drop, and that the path of excess that we are still allowing to be pursued on these public lands can very well lead to total prohibition of logging on the public lands. Opening the gates wider, as S. 1180 threatens, sends the wrong message, and travels backward to the good old days that are, for better or worse, long gone.

'There still are great loggers in this community. But we need to be moving forward, not backward, as the Baucus-Chafee-Kempthorne bill does. Perhaps Sen. Baucus is involved with this bill because he fears losing input in the issue altogether; there is much about politics, particularly in the Senate, that I will never understand. But with 84 percent of the public willing to help him, I would like to see him use our force to promote a stronger bill, not a weaker one, no matter how the political cards stand. We all understand that never before has industry so dominated the actions of the Congress and the administration. But what does it take--94 percent? I fear some days even if we had 100 percent, industry would still dictate the reduction of laws such as these, to their benefit.

'More than 140 years ago, H.D. Thoreau wrote: "I listen to a concert in which so many parts are wanting. Many of those animal migrations and their phenomena by which the Indians marked the season are no longer to be observed . . . I take infinite pains to

know all the phenomena of the spring, for instance, think that I have here the entire poem, and then, to my chagrin, I hear that it is but an imperfect copy that I possess and have read, that my ancestors have torn out many of the first leaves and grandest passages, and mutilated it in many places. I should not like to think that some demi-god had come before me and picked out some of the best of the stars.

"I wish to know an entire heaven and an entire Earth."

'Protecting one species, which is always linked to another, and then another, is an American tradition I wish the senators would not put up for sale or compromise. I would like to see more emphasis put on protecting complete habitats--particularly the last roadless areas of the public wild lands--our last islands or anchor points of ecological integrity and recovering those populations over whom we have assumed or been granted stewardship. It humiliates me to consider how to attempt an explanation to future generations of why we have no more leopard frogs, grizzly bears, or red cockaded woodpeckers, even when 84 percent of us wanted these things. How weak they will think us to have been, to have not stood firm, and how correct they will be."



Rick Bass is the author of numerous books and is best known for his writings on wolves and grizzly bears and his firsthand account of life in the Montana wilderness. His forthcoming novel, "Where the Sea Used to Be," will be published in June.

Natural Valley Storage

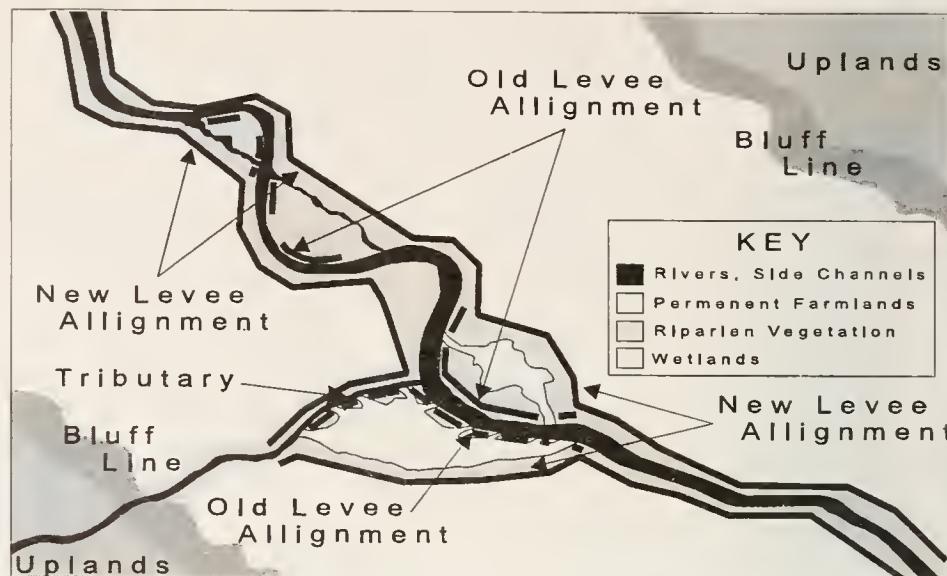
Natural Valley Storage (NVS) is a cost effective and environmentally sensitive solution to flood control. The logic behind NVS is compelling because it capitalizes on the fact that Nature has already provided the least-cost solution to future flooding in the form of extensive wetlands which moderate extreme highs and lows in stream flow. Rather

than attempt to improve on this natural protection mechanism, it is both prudent and economical to leave the hydrologic regime established over the millennia undisturbed. — Believe it or not, a statement very similar to this came out of a 1972 Corps of Engineers report on the Charles River in eastern Massachusetts.

The results of the Charles River project are impressive. Total acquisition costs were approximately \$10 million, while the "traditional structural or engineered" approach (construction of upstream flood control structures) would have cost an estimated \$100 million. The Charles is a small river with a watershed of only 309 mi² containing 35 municipalities, including the City of Boston and over a million people.

Like most urban streams, the Charles was regarded historically as a convenient means for disposing of wastes from farms, cities, towns and industry. In one reach, the river would run red on Monday, blue on Tuesday, and green on Thursday, depending on the schedule of the local dye factory. Things began to change dramatically, and for the better in 1965 when the *Boston Globe* ran a series of articles lamenting the sad state of the Charles. The *Boston Society of Landscape Architects* took up the cause, recommending a citizens organization to restore the river. This quickly resulted in the founding of the *Charles River Watershed Association* (CRWA).

From the beginning, CRWA sensed that the political arena, with its laws and programs to regulate land use and water quality was where they must work to protect the Charles. In 1973, the Association hired Rita Barron, a dynamic Executive Director, who felt that citizen pressure was needed to clean up the river. Barron, calling the Charles "The People's River", stepped up the campaign to help the public understand the value of a healthy urban river and to keep the pressure on the government agencies to give the Charles its due. The Association grew to a membership of 1,000 that became a network of watchdogs for the Charles. They canoed the river to spot sources of pollution, nagged bad



Natural Valley Storage (NVS) and floodplain habitat restorations are provided between the "setbacks" or new levee alignments shown here.

land development projects, and put pressure on their municipalities to acquire natural areas and parks along the Charles. They formed "Adopt-a-Brook" committees to clean up and restore the Charles' small tributaries.

In the mid-1970s, the Charles gained an unlikely ally in the Army Corps of Engineers, who was studying flood control on the Charles in the wake of disastrous hurricane-caused floods of the mid-1950s. Against all the odds, the Corps recognized that a highly efficient flood control system was already in place -- the wetlands and meanders of the upper and middle Charles. The Corps named this system "Natural Valley Storage" (NVS) and concluded that the most cost-effective flood control would be to permanently protect over 8,500 acres of wetlands on the main stem and tributaries. This revolutionary, "non-engineering" approach met with a lot of skepticism in the national office of the Corps, as might be expected. But to the Corps' credit the NVS project was approved and funded, giving tremendous momentum to the "Save the Charles" movement.

In the course of the Corps' study, the Massachusetts (then) Department of Natural Resources proposed the concept of the "Charles River Corridor", a mile-wide riparian commons from the headwaters to the sea. The Corridor concept was a logical extension of the

Corps' NVS program. The State was unable to convert that concept into reality, though, because of a poor grasp of watershed residents' personal interest in their lands.

Because CRWA knew the river and its people better, it took up the task of gathering information about the river and its resources. In 1975 CRWA received a \$15,000 private foundation grant and hired a landscape designer to begin the tedious but essential mapping of river frontage and inventory of properties and land uses.

In 1981, CRWA won the opportunity to translate these data into a proper workable plan. It received a second \$15,000 grant, this one from the Department of the Interior's Heritage Conservation & Recreation Service (later absorbed into the National Park Service), to hire a landscape architect to develop the *Charles River Corridor Plan*. The Association's dogged promotion of the corridor plan eventually won broad support, and the plan was given official status by the Commonwealth in 1983.

It has been 20 years since publication of the Corps of Engineers' NVS plan, and the Charles is now a source of pride for eastern Massachusetts, a "people's river" where people can swim, fish, hike and otherwise enjoy the outdoors. The Corridor is being implemented through a wide variety of techniques: floodplain regulation, farm-

land restrictions, state land purchases, private land trusts, wetland protection, and municipal zoning. The recipe varies from community to community.

Rita Barron retired in 1988, but the CRWA is still going strong. The problems are tougher than ever. New diversions of water exacerbate the pollution problem, and urban growth eats away at natural lands in the corridor. But the Association has proven its staying power. They are a fierce and informed advocate for *The People's River*. Through education, activism and celebration, they keep alive the vision of the Charles as an urban treasure.

Natural Valley Storage is just another name for the concepts of riparian wetland and floodplain restoration, levee setback and removal, and residence relocation that we have been promoting nationwide in the wake of the 1993 Midwest floods (See Figure on Page 8). It is a concept that is long overdue! Thanks to Mike Davis Minnesota Dept. of Natural Resources for calling our attention to this article.

Source: *People Protecting Rivers, River Network, April 1992*

Knee Deep in Economic Data and Delta Mud

The *Delta Land Trust* has released a much anticipated economic study that establishes the financial liability of reforestation of economically marginal farmland. The study entitled, *Reforestation of the Lower Mississippi Delta Bottomland Hardwood Forest: Economic and Policy Considerations*, was published by the *Virginia Water Resources Research Center* at *Virginia Tech University* as Research Bulletin No. 185.

Led by Dr. Len Shabman and Dr. Greg Amacher, the study is based on a computer simulation model that enabled analysis of 7 different reforestation scenarios on 10 different soil types in the ARK-LA-MISS Delta. The results are encouraging for environmentalists, landowners and others who view reforestation of economically marginal farmland as a solution to both economic and environmental

problems in the Delta.

Specifically, the study revealed that numerous reforestation scenarios are profitable in all three states and that several reforestation scenarios are economically superior to continued soybean production; even with the soybean crop insurance subsidy included. Especially profitable was the cottonwood/oak interplant technique, by which nutall oak seedlings are interplanted into cottonwood plantations, an Americanized version of a shelter crop technique made popular in Europe. The study also provides information on the environmental benefits of reforestation versus continued soybean production including cleaner water, cleaner air, groundwater recharge, fish and wildlife habitat and non-structural flood control.

A similar study by *Industrial Economics*, a private econometric consulting firm based in Cambridge, Massachusetts under contract for the U.S. Fish & Wildlife Service, found that non-structural alternatives to the Corps of Engineers proposed Big Sunflower River "Maintenance" Project would cost approximately \$77 million if timber values were not included. This calculation was significantly different from the \$121 million dollar figure the Corps of Engineers calculated for the non-structural alternative. When timber values were included, the private economists found that the cost of the non-structural alternative would drop to \$32-\$38 million, making the non-structural alternative vastly less expensive than the \$62 million structural alternative approved by the Corps.

The Big Sunflower River "Maintenance" Project has generated significant controversy in Mississippi and throughout the nation, due not only to the Corps' inaccurate non-structural analysis, but because the project is 100% federally funded (the normal local cost-share having been waived) and because of the Corps' characterization of the project as "maintenance".

The original project entailed only 31.9 river miles of excavation (dredging), yet the purported "maintenance" project entails 104 river miles of dredging. The Corps claims that the original

project, authorized in 1944, provides for follow-up maintenance to re-establish the "design flow," characteristics of the original project. Yet environmentalists wonder how a project conceived 25 years before man landed on the moon can still be the preferred alternative for floodwater damage reduction, especially in light of all the federal policy supporting non-structural solutions that has evolved since the Upper Mississippi River Flood of 1993.

The results of *Virginia Water Resources Research Center Bulletin 185* and the *Industrial Economics* report have led to contracting of *Virginia Tech* by the USEPA, Region IV for further analysis of the flood control benefits of reforestation. Specifically, Dr. Shabman and his team have been contracted by EPA to analyze the financial viability of the U. S. Fish & Wildlife Service's Non-Structural Flood Water Damage Reduction Strategy for the Yazoo Backwater Area.

Released on 8/5/97, the FWS Non-Structural Strategy entails purchase of flowage easements and reforestation in the Yazoo Backwater Area as the preferred method for dealing with backwater flooding of south Mississippi Delta farmland, rather than construction of the world's largest hydraulic lift pumps that would lift water over existing Corps of Engineers levees. Backwater flooding in that area depends upon two necessary conditions:

- Mississippi River floodwaters must elevate to the point that Yazoo River floodgates are closed, and
- There must be sufficient rainfall within the Yazoo River basin such that the closed floodgates and levees act not only to keep Mississippi River backwater out, but keep rainfall in.

In other words, the Corps levees act not only as levees but also as dams.

The Corps of Engineers prefers to build pumps for approximately \$150 million, again 100% federally funded with no local cost share, to lift the dammed up rainfall over Corps levees thus removing floodwaters from farmland faster than would occur naturally, while the federal resource agencies and many private citizens prefer that the land instead be reforested and allowed to flood naturally. These groups note that the pumps will not prevent the target farm-

land from flooding and will only reduce the amount of time the land is flooded by about three weeks. Not only would direct flood control expenditures be reduced by the non-structural method, but the ecological benefits associated with reforestation-- clean air, clean water, groundwater recharge and fish and wildlife habitat-- are significant.

An excellent discussion of the Yazoo backwater area was included in David Quammen's article in the January/February issue of *Audubon* magazine. For copies of the *Audubon* article, *Virginia Water Resources Research Center Bulletin 185* or the *Industrial Economics* analysis, please contact T. Logan Russell c/o Delta Land Trust, Post Office Box 4384, Jackson MS 39296, 601-981-3865, roi@teclink.net.

Source: *Delta Land Trust*

Farming the Floodplain

A "Farming the Floodplain" workshop, sponsored by *The Wetlands Initiative* was held in Moline, IL on 9/4/97. The workshop's recently published proceedings present the following results and recommendations:

...Speakers and participants were both encouraging and cautious about the prospects of moving to alternative farming systems on floodplains. They agreed that there is great potential to develop wider flood-tolerant uses of floodplains in the upper Mississippi River basin states, especially for agroforestry and forest products, but that more information is needed to make the transition from the uplands to the floodplain. Most university research has been focused on growing trees and crops on uplands where growing conditions are better. Growing food, fiber, fuel and forage on floodplains present additional challenges from flooding, weeds, insects, diseases, and wet conditions. In addition, there are environmental concerns about using pesticides next to rivers, soil erosion and compaction, and nutrients.

'On the other hand, the growth potential of trees and grasses on

floodplains is much higher than on uplands, once a good stand is established, and the soil does not have to be disturbed every year. Stands of trees and grasses also provide habitat for birds and wildlife and remove sediments and nutrients from runoff waters. Wetlands used for grazing or timber harvest not only store flood waters but can provide income from hunting and trapping, or from production of specialty crops.

'Everyone agreed that more research on the production of flood-tolerant crops on marginal lands was needed. But, it is also important to get farmers to experiment with different economic uses of floodplain lands as part of current efforts to divert flood prone cropland into other uses through various conservation programs. Federal money available through the Conservation Reserve Program and other U.S.D.A. programs can be used to help farmers make the transition from row crops to other uses on lands subject to flooding. But, not many farmers are taking advantage of these programs because the prices currently being paid for corn and soybeans are so high.

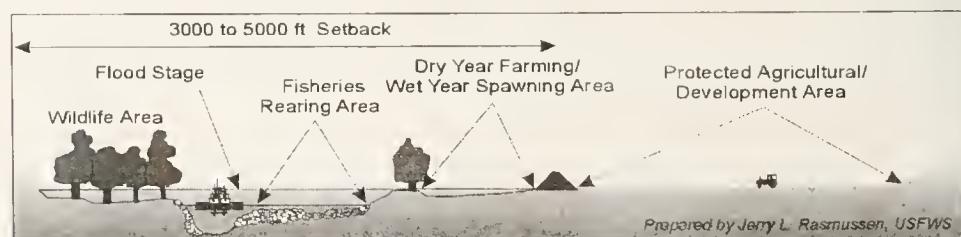
'Based on what we now know about alternative floodplain crops, there are existing markets for pulpwood, lumber and livestock. Some specialty crops could be very profitable for a few entrepreneurs, but the potential market for these high-value crops is not known. If Congress succeeds in delinking federal farm payments from crop production during the next few years, more farmers may switch to other uses of flood prone cropland. Two projects to encourage landowners to switch to flood-tolerant uses of floodplains stand out--the Iowa River Corridor Project and the Wes-Min RC&D Minnesota River Project. These are good models that could be applied

in other states. Both projects rely heavily on technical support from federal and state agencies and university extension services, as well as financial assistance to landowners from public and private sources.

'The following recommendations for future actions were made:

'1. Maintain and expand the network of people involved in floodplain farming — *The Wetlands Initiative* (TWI) has compiled a preliminary list of people who are interested in farming in the floodplain, including farmers, researchers, federal and state agency staff, and representatives of conservation and agricultural groups. These people will form the core of a network for sharing information and ideas about floodplain farming. The transcripts and summary of the workshop will be distributed to everyone who was invited to attend, as well as to all of the participants in the Upper Mississippi River Summit. They will be invited to join the network. TWI will maintain the network list for the time being, but eventually a formal structure should be established to help promote sustainable floodplain uses. We will ask people who receive the workshop report to suggest a possible structure to build on the current network and potential sources of funding to maintain and expand the network and to share experiences with establishing other networks that might help make such an effort successful.

'2. Develop technical assistance and training programs for floodplain farming — Very little technical assistance is available to landowners that want to try alternative uses of floodplains. The technical expertise that is available for some potential uses, e.g. hybrid poplars, has not been developed for use on floodplain lands, and the information that exists is widely scattered. University extension and on-farm research are



Levees along rivers should be set back away from the channel to allow for Natural Valley Storage. Traditional farming should be practiced behind levees, while non-traditional farming such as agroforestry should be practiced between the levees.

needed to gain the knowledge to provide technical assistance to private landowners. More trained natural resource managers are also needed, especially training in agroforestry practices on private lands. The U.S. Department of Agriculture should establish a permanent program to support and coordinate research and demonstration projects on alternative uses of floodplain lands.

'3. Develop financial assistance programs to allow farmers to experiment with floodplain farming — In addition to technical assistance, farmers need financial assistance to try out new crops or farming practices and to expand the pool of practical experience. Current economics prevent farmers from experimenting with alternative uses of flood prone land. Programs designed specifically to provide innovative farmers with financial assistance to experiment with alternative crops and uses of floodplain land should be developed. Both public and private sources of financial assistance are needed.

'4. Promote opportunities to link land retirement programs and floodplain farming — Some federal land retirement programs, such as CRP and WRP, provide direct payments to landowners to convert cropland to flood-tolerant uses. Hunting, trapping, timber harvesting and grazing may be allowable economic activities on these areas under certain conditions when done with an approved conservation plan. Greater efforts to promote compatible economic uses of floodplain lands enrolled in CRP and WRP are needed to help farmers make the switch to alternative uses of flood prone cropland."

For further information contact: *The Wetlands Initiative*, 53 West Jackson Blvd., Suite 101S, Chicago, IL 60604, (312) 922-0777, Fax (312) 922-1823, wetlands97@aol.com

International Action Day Against Dams

To protest river destruction, boost public awareness, and promote sustainable river management, "tens of thousands" of protestors in 23 countries on 3/14/98 staged marches and

gathered along rivers in observance of the *International Day of Action Against Dams and for Rivers, Water and Life*.

More than 1,000 environmentalists formed a mile-long human chain along the Danube River in protest of Hungary's plans to build a dam on that river. Meanwhile, hundreds of potentially dam-affected people "invaded" the site of the Machadinho Dam on southern Brazil's Pelotas River, and 3,000 people seized the offices of the regional utility *CHESF* to protest the Itaparica Dam on northeastern Brazil's Sao Francisco River.

In the US, more than 100 demonstrators gathered in San Francisco to protest Chile's Ralco Dam and China's Three Gorges Dam, according to the *International Rivers Network*. River celebrations were held at the site of India's Maheshwar Dam and along Japan's Kawabe River. Among the other countries organizing events were Australia, Argentina, Canada, Costa Rica, France, Germany, Philippines, Poland, Russia, Slovakia, Spain, Taiwan and Uruguay.

Meanwhile, the *World Commission on Dams*, a joint effort by the *World Bank* and the *World Conservation Union* aimed at establishing worldwide standards for dam building, "seems to be holding" together after being created earlier this year, according to a feature in the *Wall Street Journal* on 3/19. The 12-member commission is composed of representatives from industry, environmental groups and advocates of dam-affected people. The *Environmental Defense Fund's* Deborah Moore said, "People want to get beyond the individual controversies around each individual dam. Rather than repeating the same tired arguments, it's time to ask how can we better define a common ground."

"Those spearheading the dam commission see it as a way to tackle a much broader problem afflicting a range of resource-development industries, from mining to logging to oil exploration," reports the *Wall Street Journal*. The commission's staff coordinator Richard Bissell said, "For people trying to balance development and the environment, this is the best idea to come down the pike in a long time".

Meanwhile in the U.S.'s Pacific Northwest, a determination has been made that breaching four dams on the Snake River and one on the Columbia River to help restore salmon runs wouldn't bankrupt the *Bonneville Power Administration (BPA)* in the next decade. The study by the "Three Sovereigns" work group-- a process involving federal, state and tribal officials in a new body to govern salmon recovery in the Columbia River Basin -- found that beginning in 2009, the cost could become a problem, rising to \$307 million a year, almost three times what the federal power marketing agency now spends on salmon recovery. That figure does not include lost revenue from decreased power production.

These cost estimates represent "the most complete accounting thus far" on breaching the dams, and "they are the first to reflect some degree of consensus among states, tribes and the federal government." The work group studied 11 different scenarios, ranging from improving the current system of barging fish downstream to breaching the four lower Snake River dams and the John Day Dam on the Columbia.

Bob Lohn, BPA's fish and wildlife director, agreed that the figures mean the agency could afford the cost of breaching the dams in the short term. The BPA is "trying to anticipate its future salmon-recovery costs" in preparation for utility deregulation. The Clinton Administration is expected to make a decision about the dams in 1999.

Sources: *International Rivers Network* release, 3/14/98, *Reuters/Central Europe Online*, 3/16/98, G. Pascal Zachary, *Wall Street Journal*, 3/19/98; Joan Laatz Jewett, *Portland Oregonian*, 3/17/98; and *National Journal's GREENWIRE, The Environmental News Daily*, 3/17, 3/18 and 3/19/98

World Water Markets or Wars?

A UN conference on managing the world's limited supply of fresh water concluded on 3/21/98 that "water should be paid for as a commodity rather than be treated as an essential staple to be supplied free."

Many environment ministers and officials from the 84 nations attending the Paris conference recommended "the gradual introduction" of a market system to capture the direct and indirect costs of providing water. But poorer countries argued that water should be free. After hearing that one-quarter of the world's 5.9 billion people lack access to clean drinking water, the delegates agreed that the problem of water shortages "was so important" that governments would need to rely on private investment for the water systems to assure future supplies.

French President Jacques Chirac told the conference that it would cost \$400 billion to set up reliable water networks around the world. Noting that water shortages pose a threat to world peace, Chirac called for the creation of an international water academy to maximize resources. Chirac asked, "Are we going to allow the 21st century to be the century of the water wars?"

Sources: *Reuters/Boston Globe*, 3/22/98; *Baltimore Sun*, 3/21/98; and National Journal's GREENWIRE, *The Environmental News Daily*,

Tribes Sign New Water Accord

European settlers came to the Oregon territory four generations ago to occupy and use lands which the people of the Wasco, Warm Springs, and Northern Paiute bands of Indians had already occupied four countless generations (i.e. the Cascade rainforests, the river basins of the Columbia Plateau, and the northern Great Basin desert). The native peoples were fishers and gatherers, subsisting mainly on Chinook salmon and huckleberries.

In 1855, the Wasco and Walla Walla (Warm Springs) tribes signed a treaty with the U.S. to secure their historic rights in perpetuity. The treaty reserved the Warm Springs Reservation, which encompasses a significant part of Oregon's Deschutes River Basin, for the Tribes' exclusive use forever. The Tribes ceded to the U.S. title to more than ten million acres, while reserving hunting, fish-

ing, pasturing, and gathering rights on aboriginal lands for which they did not seek ownership.

On 11/17/97, the Tribes signed another historic agreement, this time with both the U.S. and the State of Oregon. In settling the Tribes' treaty and aboriginal claims to water, the new agreement:

- Creates a framework for cooperative water management to protect fresh water supplies for salmon survival and other ecological purposes,
- Sets aside the entire flow of all streams on the reservation to "sustain or enhance the aquatic ecosystem," except for specified quantities that the Tribes are entitled to consume,
- Establishes minimum stream flows for the Deschutes and other major rivers needed for survival of salmon and other life,
- Recognizes that even larger minimum stream flows may be established in the future under Federal or state law,
- Protects existing and future tribal uses of water, and
- Authorizes the Tribes to market a block of their water off the reservation.

The new accord establishes an innovative link between the environment and Indian water rights by focusing on stream flows rather than "practicable irrigable acreage". It thus provides important lessons and new ideas for the many Indian water rights claims still unsettled. The agreement comes at a critical time because of regional growth in the recreational, residential, and industrial sectors, while timber, agriculture, and ranching are in economic decline and under political assault. Wild species, most visibly the Pacific salmon, are also teetering on the brink of extinction. An ecological milestone in the Basin is the leadership of several irrigation districts in voluntarily transferring water previously diverted from the Deschutes and Tumalo rivers back to instream flows.

Source: EDF Letter, Vol. XXIX, No. 2, April 1998, 3/23/98

Nutrient Flow/*Pfiesteria* Linked

Reducing the flow of nutrients into waterways is likely to curb the risk of

toxic outbreaks of *Pfiesteria piscicida*, according to a study conducted by a panel of scientists in North Carolina. The report, produced by 14 chemists, biologists and aquatic ecologists who convened at the *University of North Carolina's Water Resources Research Institute* in 12/97, recommends that efforts be made to manage nutrient runoff from "all major sources" of phosphorus and nitrogen, including animal and human waste, air pollution and commercial fertilizers. However, the report "says there is not enough evidence to establish a causal relationship between specific nutrient sources and *Pfiesteria* outbreaks." The study was requested by North Carolina Gov. James Hunt (D) in response to criticism that the state, where the fish-killing microbe was first discovered, had been slow to combat the toxic outbreaks in its waters. The research "endorsed" the findings of similar studies in Maryland, which formed the basis for controversial water-quality legislation proposed by MD Gov. Parris Glendening (D).

Meanwhile, scientists in North Carolina and Maryland on 3/20 announced that the first study of long-term health problems associated with exposure to *Pfiesteria* failed to find any significant differences among people who were exposed to the toxic microbe and those who were not. Although the study of 50 people did not produce any firm conclusions, researcher Stan Music of the North Carolina Dept. of Health and Human Services said it was helpful in teaching scientists how to improve future studies. Scientists say measuring the extent of longterm symptoms such as the skin lesions, memory loss, and shortness of breath reported by those exposed to *Pfiesteria* are impossible to measure because they lack data about whether people had the problems before they were exposed.

A more detailed study using a larger sample is slated to begin this spring and continue through the summer of 1999. In this research, a team of government-appointed doctors will study the health of up to 170 people who work on the water in an effort to determine how many Marylanders are being sickened by the toxic microbe. David Oldach of the state's medical team said the study will focus on fishers and crabbers in the Tangier Sound region, which is fed by

Catfish 2000



Catfish 2000 *1st International Ictalurid Symposium*



1st International Ictalurid Symposium

When: 23-25 June, 1998

Where: River Center
Davenport, IA USA

Why: Bring together specialists from resource agencies across the nation, invited international guests, and interested fishing public to discuss and share their knowledge concerning the biology and management of "catfishes" and to help promote the "catfish family" as important sport and commercial fish species.

Potential Meeting Highlights: 3-day symposium covering catfish biology and management followed by a facilitated workshop to help determine the present needs and future direction of catfish management across the nation.

Who Should Attend? All fisheries specialists, administrators, and interested fishing public who are interested in learning about and promoting the "catfish family" as an important international fish resource.

Sponsored by: American Fisheries Society (Iowa and Illinois Chapters, and the North Central Division), Upper Mississippi River Conservation Committee (UMRCC), Quad Cities Conservation Alliance (QCCA), and In-Fisherman, Inc.

Accommodations: The meeting will be held at the beautiful River Center, in downtown Davenport. The Historic Blackhawk Hotel adjacent to the River Center will serve as the "host hotel" and reservations need to be made prior to May 22, 1998 (1-800-553-1173). Rates at the Blackhawk are \$70.00 plus 12% tax for a single or double room and \$99.00 for a suite equipped with a full kitchen. Rooms have also been blocked at the Radisson Hotel one block away. Room Rates at the Radisson (1-319-322-2200) are \$79.00 plus 12% tax for 1 to 4 people.

**For Additional Information, Please Visit the Catfish 2000
Web Site: <http://www.fw.umn.edu/ncdafs/cf2000>**



1st International Ictalurid Symposium

June 23-25, 1998
River Center
Davenport, Iowa

Registration form

Send Registration To:

Bill Bertrand • Illinois DNR • Box 149 • Aledo, IL 61231
309/582-5611 • Fax 309/582-5613 • dnrbrp@netins.net

Name: _____	Spouse's Name (if attending): _____
Occupation/Affiliation: _____	
Address: _____	
City/State/Provence: _____	Zip/Postal Code: _____
Country: _____	
Daytime Phone: _____	Fax: _____
e-mail: _____	
If assistive technology required please describe: _____	

1. Badge Information (please print or type)

2. Registration

I'll Pay at the
Meeting

Checks or
Agency PO

No Credit
Cards Accepted

Early Bird Registration (must be postmarked by March 1, 1998) (includes proceedings, Monday night social, breaks, and continental breakfast Tue & Wed)	\$ 150.00
Full Conference Registration (after March 1, 1998) (includes proceedings, Monday night social, breaks and continental breakfast Tue & Wed)	\$ 175.00
One Day Registration * <i>circle one</i> - Tue, Wed, Thur	\$ 75.00
Student for Conference *	\$ 50.00
Student One Day Registration * <i>circle one</i> - Tue, Wed, Thur	\$ 25.00
Spouse for Conference *	\$ 50.00
Thursday workshop (no charge, but please check if planning to attend)	<input type="checkbox"/>
<i>* proceedings NOT included</i>	
	Total Registration <input type="text"/>

3. Meals I'll Pay at the Meeting

Day	Meal/Location	Cost	No. needed	Total
	The Whole Enchilada	Includes all events and meals listed below	\$ 61.00 x	= \$ _____
Tue. June 23	Lunch Blackhawk Hotel	Deli buffet	\$ 9.75 x	= \$ _____
	Dinner Indian Bluff Forest Preserve	Fish fry - catfish, side salad and five pepper hush puppies plus transportation to dining hall <input type="checkbox"/> check here for non-fish entree	\$ 16.50 x	= \$ _____
Wed. June 24	Lunch Blackhawk Hotel	Deli buffet	\$ 9.75 x	= \$ _____
	Dinner Blackhawk Hotel and River Center	Banquet - scheduled speakers include Doug Stange and other international catfish experts, meal consists of choice of 2 entrees - salad plate available	\$ 25.00 x	= \$ _____
				Total Meals <input type="text"/>

Return this Registration Form and check or
Agency PO payable to *Catfish 2000*

Registration + Meals = Total

\$

the three waterways that were closed last summer due to *Pfiesteria*-related fish kills, as well as along the coastal bays of the Delmarva peninsula, the upper Chesapeake and the western shore. The *Centers for Disease Control and Prevention (CDC)* has granted Maryland more than \$1 million for the research. The money is part of a \$7 million House appropriation earmarked for a CDC study of *Pfiesteria*. The bill, co-sponsored by Reps. Steny Hoyer (MD/D), Wayne Gilchrest (R/MD), and Michael Castle (R/DE), was approved in 9/97. Although Maryland's grant is the largest, Delaware, Florida, North Carolina, South Carolina and Virginia will also receive research funding from the legislation.

Meanwhile, the Maryland Dept. of Natural Resources plans to launch a \$1 million *Pfiesteria* monitoring effort of Kings Creek and six Eastern Shore rivers. Kent Price, director of the *Sea Grant Marine Advisory Service*, said a technique for detecting *Pfiesteria* in waterways is now ready for trials. The test uses the "glowing enzyme from the firefly" in a genetically engineered cell that illuminates when it contacts the microbe's toxins.

JoAnn Burkholder, the "controversial" *North Carolina State University* marine biologist who first called attention to *Pfiesteria* was recently awarded the 1998 Scientific Freedom and Responsibility Award by the *American Association for the Advancement of Science*. Burkholder was "honored for her persistence in calling the public's public attention" to the problem, which she helped discover in 1988.

Meanwhile in Florida, "thousands and thousands" of silver mullet plagued with lesions were discovered earlier this year in the St. Lucie River near Stuart. Scientists have found "strong parallels" between the newly named toxic microorganism *Cryptoperidiniopsis* discovered in the waterway and *Pfiesteria*, but the link between the new microbe and the sick fish remains "no more than a suspicion".

Sources: Michael Dresser, *Baltimore Sun*, 1/31/98; Douglas Birch, *Baltimore Sun*, 2/20/98; Todd Spangler, *AP/Washington Times*,

2/20/98; A.J. Hostetler, *Richmond Times-Dispatch*, 2/15/98; Heather Dewar, *Baltimore Sun* 3/20 and 3/21/98; Estes Thompson, *AP/Washington Times*, 3/21 and 3/22/98; and National Journal's *GREENWIRE, The Environmental News Daily*, 2/2, 2/17, 2/20, 3/18, and 3/23/98

EPA Farm Pollution Plan

As expected, the USEPA on March 5th said it would soon develop regulations to require some 6,000 large livestock feedlots and poultry farms to get pollution permits and control waste runoff. The plan marks the first federal attempt to regulate such facilities under the Clean Water Act (CWA).

The agency's goal is to begin issuing permits by 2005, with the largest facilities and those adjacent to polluted waterways being controlled by 2002 or 2003. Over the next few years, the EPA also intends to propose regulations mandating particular pollution-control equipment for big farms. The new measures could require equipment that captures methane fumes and may proscribe the way in which manure is spread on fields. The agency estimates that manure-laden runoff is the source of 16% of all farm-related pollution problems.

The agency has had authority to regulate farm pollution for more than 20 years, but until recently "it has been a low priority." EPA Administrator Carol Browner said, "Things like *Pfiesteria* were part of the wake-up call". Environmental groups, including the 1,000-member coalition *Clean Water Network (CWN)*, praised the EPA initiative but also called on the agency to "make it stronger". The *National Cattlemen's Beef Association (NCBA)*, promised to work with EPA officials as they develop the new regulations.

Meanwhile, researchers from the Uni-

versity of Missouri on 3/17/98 announced that a new hybrid corn can help cut hog waste pollution by reducing the phosphorous in hog manure. In a study of more than 200 hogs, those fed the new hybrid corn excreted 37% less phosphorous than those fed regular corn. Phosphorous and other nutrient runoff from agriculture can pollute streams and reservoirs, "leading to rapid growth of algae" and drinking water contamination.

The new feed, called low-phytate corn, was bred to make the phosphorus in the kernels more absorbable in the digestive tract. Lead researcher Gary Adleea said the same approach could be used to reduce phosphorus excretions from poultry. *Pioneer Hi-Bred* of Johnson, IA, which helped finance the study, plans to market the new corn in two years.

To reduce nutrient runoff into the Chesapeake Bay, Maryland Gov. Parris Glendening (D) has allocated \$4.5 million from his \$41 million "war against *Pfiesteria*" to help farmers pay for nitrogen-absorbing "cover crops," or wheat, rye and barley that is planted after fall harvest. Maryland farmers, however, have protested Glendening's plan to force them to control nutrient runoff. But Bill Matuszeski of the USEPA's Chesapeake Bay office says that "[o]f the three major Chesapeake Bay watershed states -- Maryland, Pennsylvania and Virginia -- Maryland is dead last in enforceable authority over agriculture pollution".

Sources: H. Josef Hebert, *AP/San Francisco Chronicle/Examiner* online, 3/6/98; John Cushman, *New York Times*, 3/6/98; John Fialka, *Wall Street Journal*; Heather Dewar, *Baltimore Sun*; CWN release, 3/5/98; NCBA release, 3/5/98; and William Allen, *St. Louis Post-Dispatch*, 3/18/98; Ted Shelsby, *Baltimore Sun*, 3/19/98 National Journal's *GREENWIRE, The Environmental News Daily*, 3/6 and 3/19/98

Ag Waste Legislation

Rep. George Miller (D/CA) on 2/12/98 introduced a bill that would force large-scale farmers and ranchers to prevent animal waste runoff from polluting U.S. waterways. The legislation would require farmers to



obtain discharge permits under the federal Clean Water Act (CWA), install sewage treatment facilities where contaminated runoff threatens streams and rivers, and limit the amount of waste used to fertilize cropland. It would apply to ranches and farms with more than 350 dairy cows, 500 cattle, 1,000 pigs, 5,000 sheep, 27,500 turkeys or 50,000 chickens. The U.S. Senate is currently considering similar legislation.

In Illinois, House Speaker Michael Madigan has proposed a bill that would give local authorities control over the influx of large-scale hog farms, and has asked state agriculture officials to halt approval of new farms until the controls are in place.

A Kansas House Environment subcommittee is reviewing that state's laws on agricultural waste, but Committee Chair Joann Freeborn (R) said she would not hold hearings on bills that would impose a moratorium on large-scale hog farms.

The Nebraska legislature is considering bills that would provide the state Dept. of Environmental Quality with \$200,000 for improved inspection of large-scale farms and force counties to adopt zoning plans for such operations within two years.

The Oklahoma Senate Energy, Environmental Resources and Regulatory Affairs Committee on 2/12/98 approved bills that would impose tougher standards on the hog and poultry industries and require state licensing of facilities.

In Virginia, the state House has given tentative approval, 58-36, to legislation authorizing the State Water Control Board to regulate the disposal of poultry waste within the Chesapeake Bay watershed. The bill would require farmers to implement nutrient management plans that limit the amount of waste applied to fields and would set standards for the storage and treatment of poultry waste. Responsibility for complying with the laws would be shared by chicken farmers and poultry companies. Virginia Gov. Jim Gilmore (R) had hoped the legislation would be delayed to allow for further study of the issue. But Chuck Epes of the *Chesapeake*

Bay Foundation said there was enough evidence to suggest a delay could be harmful to the bay.

Minnesota state Rep. Doug Patterson (D) has introduced a "long-awaited" bill calling for a two-year moratorium on large-scale animal feedlots. The bill would ban the construction or expansion of feedlots with more than 750 animal units. Earlier, more than 100 people rallied at the Minnesota Capitol, voicing concerns about odors, respiratory problems and the risk of water pollution from large livestock operations. The rally, sponsored by the *Sierra Club*, *Clean Water Action Alliance* and other environmental groups, also drew gubernatorial candidate Mark Dayton (D), who challenged his fellow Democratic candidates to support a two-year moratorium. Dayton, as well as his rival Attorney General Hubert Humphrey (D), said they would support legislation preventing the expansion, construction or operation of new feedlots with more than 750 animal units without completion of an environmental impact statement. A spokesperson for Humphrey emphasized that the AG doesn't want to shut down the industry; he wants "to slow the rate of acceleration." But the moratorium idea "doesn't appear to have generated sufficient support" in the legislature. Meanwhile, Gov. Arne Carlson (R) has proposed a two-year, \$3 million inventory of the industry and its impacts on the environment and rural communities.

Maryland farmers opposed to the water-quality initiative proposed by MD Gov. Parris Glendening (D) have charged that mandatory limits on fertilizer use would be a threat to their property rights. Glendening's proposal, which aims to combat pollution of the Chesapeake Bay and outbreaks of *Pfiesteria*, is currently being considered by the MD General Assembly. Some farmers have argued that beyond the economic and environmental issues are "their rights to use their property as they see fit." They objected to Glendening's proposal to create enforcement teams that would monitor farms to ensure that farmers are complying with nutrient-management programs, arguing that voluntary programs would be fairer and more effective. But environmentalists argued that agriculture must be regulated to curb runoff, just

like any other industry. They said that voluntary programs currently in place have failed to stem nutrient runoff, and that mandatory programs are the only way to protect the bay, the seafood and tourism industries, and public health from future *Pfiesteria* outbreaks.

Sources: Michael Hytha, *San Francisco Chronicle*, 2/13/98; *USA Today*, 2/11/98; Steve Painter, *Wichita Eagle*, 2/13/98; *AP/Casper [WY] Star-Tribune*, 2/12/98; John Greiner, *Oklahoma City Daily Oklahoman*, 2/13/98; Larry O'Dell, *AP/Washington Times*, 2/17/98; Greg Edwards, *Richmond Times-Dispatch*, 2/14/98; Peter Goodman, *Washington Post*, 2/14/98; Dennis Lien, *St. Paul Pioneer Press*, 2/2, 2/3 and 2/4/98; *National Journal's GREENWIRE, The Environmental News Daily*, 2/4 and 2/17/98

Toxics Wastes Shipped to Farms

"Broadly written rules have allowed steel mills, foundries and chemical plants to dispose of toxic waste" by shipping it to farms and fertilizer companies, according to a report released on 3/26 by the DC-based *Environmental Working Group (EWG)*. The report, based on data from the USEPA's *Toxics Release Inventory*, found that 454 farms or fertilizer manufacturers received some 271 million pounds of waste -- including mercury, chromium,



arsenic and lead compounds -- from 600 companies in 44 states between 1990 and 1995. The steel industry provided companies and farms with 30% of the toxic waste, with fertilizer companies in California, Georgia, New Jersey, Nebraska and Washington receiving more than half the national total.

EWG Pres. Ken Cook blamed "legal

"loopholes" for the presence of toxic waste in fertilizer. Cook said that steel companies are permitted to sell their hazardous smokestack ash without testing, and that companies may also transfer waste directly to farms "if it can be safely rendered harmless on land". Cook recommended requiring that all raw fertilizer material be tested and labeled for toxic content.

Although no health or environmental risks from the toxics have been proved, Bill Leibhardt of the *University of California* at Davis, said the report raises more questions about the long-term impact of heavy metals and dioxin on the food supply. But Carl Shauble, executive VP of Ozark, AL-based fertilizer company *Frit Industries Inc.*, called the conversion of wastes into fertilizer "a safe practice [that is] beneficial to the environment." He added that the amount of toxic waste in fertilizer is "minimal".

"Responding to health and environmental concerns..." a group of state fertilizer regulators is unanimously recommending that every state adopt new standards, screening, testing and labeling for fertilizers containing heavy metals. The move by the *Association of American Plant Food Control Officials* aims to establish a national consensus for regulation despite objections of the fertilizer industry, which "concedes" that some regulation is needed.

Washington was the first state to adopt standards when Gov. Gary Locke (D) on 3/18/98 signed a law limiting the amount of industrial waste that can be recycled into fertilizer. The legislation will force fertilizer manufacturers to disclose "unadvertised" ingredients to state regulators to prove they meet standards for nine toxic metals and will require detailed information on the exact content of every fertilizer product to be posted on a state Web-site. The measure also requires a major study on dioxins in fertilizers by the end of the year. Fertilizer and food-products industry officials praised the law. But environmentalists "blasted" it for not going far enough. John Stier of the *Washington Public Interest Research Group* said, "Locke gave industry exactly what it wanted

-- a license to continue dumping arsenic, lead and dioxin on the ground that grows our food".

Other states including California, Idaho, Oregon and Texas also have new laws or regulations in the works. Kentucky fertilizer regulator David Terry said, "I wouldn't go so far as to say these changes will solve the problem, but they'll give us a handle on it and give people who buy fertilizer the information they need." The fertilizer industry, however, is planning a state-by-state lobbying campaign to "keep standards loose and avoid listing ingredients in a way that exposes them to liability".

Source: *Wall Street Journal*, 3/27/98; Curt Anderson, *AP/Las Vegas Sun/others*, 3/26/98; Duff Wilson, *Seattle Times/others*, 3/26/98; Duff Wilson, *Seattle Times*, 3/19/98; Jerry Perkins, *Des Moines Register* 3/28/98; Duff Wilson, *Seattle Times*, 2/20/98 and *National Journal's GREENWIRE, The Environmental News Daily*, 2/24, 3/20 and 3/27/98

Possible Breakthrough on Deformed Frogs

A low-budget, carefully targeted research effort appears to have produced a significant finding in the long-running scientific mystery of the grossly deformed frogs found by school children in a pond near Henderson, Minnesota, in the summer of 1995.

Since that time scientists around the country have been struggling to understand what may be causing the abnormalities, which have subsequently been discovered in a number of other states. But now a group of researchers led by David Gardiner of the *University of California, Irvine*, and Bruce Blumberg of the *Salk Institute* in La Jolla report that new evidence links the frog deformities with exposure to substances known as "retinoids."

Retinoids, compounds that are derived from Vitamin A, include the powerful hormone retinoic acid, which regulates several key aspects of development in all vertebrates, including humans. Exposure to excess amounts of retinoic acid is known to produce birth

defects. In humans, for example, the retinoid-based acne treatment Accutane has produced birth defects when used by pregnant women.

Taking different approaches, Blumberg and Gardiner discovered retinoids in water samples from a Minnesota lake that has produced many deformed frogs, plus evidence that the limb abnormalities in frogs from the site were in fact caused at least in part by retinoids. The researchers stress that the findings, presented at the *Midwest Declining Amphibians Conference* in Milwaukee, are preliminary and point only to the need for further work, not to a final answer. But the results are significant, they said, because two independent lines of inquiry implicate retinoids, and because of the human health risks of retinoid exposure.

"Bioactive retinoids in water are a definite public health risk," said Blumberg. "Retinoids cause developmental deformities in every vertebrate species that's been tested, from primitive fish to humans." Frogs with extra legs, missing legs or leg parts, bizarre skin webbings, missing eyes and a variety of misshapen legs have been found throughout Minnesota, as well as in several other states, including Vermont, Oregon and Delaware, prompting investigations by a number of state and federal agencies. Frogs with similar deformities have been under study in Quebec by the Canadian Wildlife Service since



1992. Scientists are concerned about the frog deformities, as well as the possibility that amphibians in general may be declining around the world, because some biologists consider amphibians "sentinel species" that can provide early signals for serious environmental problems.

A variety of possible explanations have been proposed for the frog deformities,

ranging from relatively innocuous natural causes to possibly more alarming toxics, such as pesticide pollution.

In September, the Minnesota Pollution Control Agency (MPCA) and the *National Institute of Environmental Health Sciences* (NIEHS) announced that water from private wells in Minnesota had produced deformities in laboratory frogs, and began distributing bottled water to people whose wells were near sites with deformed frogs. The announcement was criticized by other scientists who objected that the test procedure was flawed and the drinking water warnings premature. The MPCA and NIEHS now acknowledge that further tests show no evidence of contamination in those wells -- or at more than two dozen others added to the study since then. But the picture remains muddy because five additional wells tested recently do appear contaminated and not all of them are near sites with deformed frogs. Together, the MPCA and NIEHS have spent nearly \$1 million on the frog problem.

Gardiner and Blumberg said their research, which so far has cost \$5,000 plus some lab time and materials, began last fall, after a two-day brainstorming session with colleagues who felt the larger investigation had failed to aggressively pursue the retinoid scenario. The meeting was organized by Gardiner and his wife, Susan Bryant, a prominent limb development expert at the *University of California, Irvine*. "Retinoids are clearly the place to start," said Gardiner. "This is a problem in development and developmental biologists have the resources available to attack the problem."

Gardiner contacted David Hoppe of the *University of Minnesota, Morris*, the state's leading field investigator, and obtained 29 frog specimens. In November, Gardiner went to Minnesota and collected water from the lake where the frogs were found. Blumberg tested the water with a sensitive assay that measures the activation of human retinoic acid "receptor" proteins. Those receptors regulate genes in human cells that are critical in limb development and pat-

terning when they are switched on by retinoic acid. The water tested positive.

Meanwhile, Gardiner and Bryant examined the frogs with a commonly used procedure for clearing the animals' soft tissue while staining the cartilage and bone. The result is a transparent "visible frog" in which the skeleton is dyed a deep blue. In every deformed frog examined, one or more leg segments seemed to be growing back on itself in reverse, producing a "triangulated" appearance. These unique "bony triangles" have turned up repeatedly in past retinoic acid experiments. Gardiner and Bryant eventually concluded that bony triangles are a signature of retinoid exposure. "We thought we'd never seen anything like that before," said Gardiner. "But when we looked back at the literature, there they were. In chickens. In mice. In several species of frogs."

The retinoid, or retinoid-like substance, detected in the Minnesota water could be a pesticide or a derivative of one, Blumberg said. It is also possible that it's a natural compound produced by microorganisms or plants in the lake. "If it's natural in origin that just means there's nobody to blame," he said. Gardiner and Blumberg think there may be more than just a retinoid behind the frog deformities. While it is certain that a retinoid could cause abnormal leg development, evidence that retinoids alone can induce entire extra legs is mixed.

Jim Burkhart, a research biologist who heads the NIEHS frog investigation, said his agency recently found retinoids in water samples from several sites in Minnesota using a test slightly different from the one developed by Blumberg. The USEPA, which last year tested the insecticide methoprene for possible retinoid properties, is also now preparing a more general retinoid assay it will begin using this spring. By then, Gardiner and Blumberg plan to be working on more water samples. But they also hope to do something that no one else has yet managed. "I think what we've got to do now is show people that one last piece of the puzzle," Gardiner said. "We're going to have to produce a frog with extra legs in the lab."

Source: William Souder, *The Washington Post*, 3/16/98

Miscellaneous River Issues

FL Lake Restoration Problems -- Some scientists say the \$91 million plan to clean up Lake Apopka in central Florida may be more dangerous to fish than the fertilizer runoff that is polluting the lake. Fisheries biologist John Benton and others said the *St. John's Water Management District*'s plan to purchase surrounding farmland, flood it and pump nutrients onto vacant land could expose lake wildlife to hormonal problems that may be associated with pesticides used on the property. Sources: *AP/Miami Herald*, 2/2/98 and *National Journal's GREENWIRE, The Environmental News Daily*, 2/3/98

Fox River, WI Pollution — The *Fox Cities Chamber of Commerce & Industry* has launched an "all-out offensive" against the possible Superfund designation for the Fox River, saying the label would be detrimental to the local economy and do little to help the environment. About 40 tons of PCBs are dispersed along a 39-mile stretch of the river. Sources: *AP/St. Paul Pioneer Press*, 1/2/98 and *National Journal's GREENWIRE, The Environmental News Daily*, 2/3/98

Landslides and Clearcuts — More landslides come out of clearcuts than out of forests that have not been logged for the past 100 years, according to a continuing study of landslides in Oregon's Coast Range released on 1/29/98 by the Oregon Dept. of Forestry. The report, which studied 52 square miles of land and documented 600 landslides following heavy storms in 2/96 and 11/96, for the first time calculated that clearcutting increases the risk of landslides. The findings are based on variables such as the steepness of slope and amount of rain. Environmentalists said the report pointed to the need for "overhauls" of logging practices. But timber industry officials were "alarmed" by the report. Jim Geisinger of the *Northwest Forestry Assn.* said the industry would be harmed if harvesting was banned on steep slopes. Jim James of *Willamette Industries*, which owns 610,000 acres of Oregon timber land, suggested that more careful logging practices and construction of

fewer roads could solve the problem. The study did not address whether clearcutting affects the severity of landslides, and the *Assn. of Forest Service Employees for Environmental Ethics* "said the study was flawed because forestry officials did not report data on landslide size." The completed report is expected to be used by a special panel convened by Oregon Gov. John Kitzhaber to recommend changes to the state's logging rules. Sources: Jeff Barnard, *AP/Seattle Daily Journal of Commerce*, 1/30/98; Jonathan Brinckman, *Portland Oregonian*, 1/30/98; and National Journal's *GREENWIRE, The Environmental News Daily*,

MN River Protection — Minnesota farm officials and environmental leaders have approved a Minnesota River Conservation Reserve Enhancement Program and sent it to Agriculture Secretary Dan Glickman for support. The "ambitious" project, conceived by Gov. Arne Carlson (R), could become the largest river restoration project in the U.S. It would idle 190,000 acres of farmland along the river, turning some into buffer zones and wetlands. The plan would combine \$50 million in state conservation funds with \$200 million from the federal Conservation Reserve Program. A *Minneapolis Star-Tribune* editorial calls it "a sensible compromise that deserves Glickman's endorsement". Landowners would be guaranteed annual payments and up-front bonuses to retire flood-prone land and replant it with native grasses or trees. While the program is expected to improve wildlife habitat and water quality and reduce flooding and agricultural runoff, some farmers have opposed the program because it would take land out of production permanently. Sources: Dennis Lien, *St. Paul Pioneer Press*, 2/19/98 and National Journal's *GREENWIRE, The Environmental News Daily*, 2/4/98

MN Watercraft Ban — The Minnesota House Environment and Natural Resources Committee on 2/2/98 approved a bill that would ban the use of personal watercraft on lakes of 200 acres or smaller -- 87% of the state's lakes — unless local authorities choose to permit them. Because Minnesota has so many large lakes,

much of its water surface would remain open. But Minnesota-based manufacturers of personal watercraft say the industry is developing quieter engines that will help curb noise. Sources: Jim Ragsdale, *St. Paul Pioneer Press*, 2/3/98 and National Journal's *GREENWIRE, The Environmental News Daily*, 2/4/98.

MT Waterways Suit? - The USEPA has put Montana waterways at risk by failing to review the state's water-quality standards for nine years, according to several environmental groups who filed a notice to sue in early March. *American Wildlands, Pacific Rivers Council* and the *Montana Environmental Information Center* vowed to carry through with the suit under the Clean Water Act (CWA) if the EPA does not take action to assess stream pollution throughout Montana. The move comes as environmentalists are suing the EPA to act on water-quality standards in 14 other states. In a letter to EPA Administrator Carol Browner, the groups said the state has changed its regulations governing water quality since 1989. The CWA requires the USEPA to review such changes. The environmentalists said that Montana's water pollution regulations exempt entire categories of potentially polluting activities, such as oil and gas drilling and mineral exploration, from environmental review. Sources: Erin Billings, *Billings Gazette*, 3/6/98; *American Wildlands* release, 3/5/98; National Journal's *GREENWIRE, The Environmental News Daily*, 3/6/98

Napa County, CA Flood Control -- In early March voters narrowly approved a flood control initiative that would fund flood protection and watershed management. The measure, which "squeaked through with about 68% approval," will raise \$6 million annually for the next 20 years to implement projects on the Napa River to control floods while expanding marshlands and riparian forests to improve wildlife habitat. The initiative includes plans to remove buildings from flood zones, replenish fish stocks, cleanup riverside toxics sites and limit the use of concrete to a short channel around historic buildings. Paul Bowers of the US Army Corps of Engineers called the plan's emphasis on river restoration rather than destruction "truly unique".

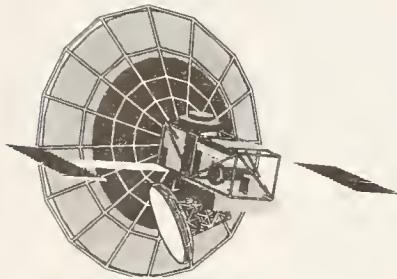
Sources: *AP/San Francisco Chronicle/Examiner* 3/4 and 3/5/98; and National Journal's *GREENWIRE, The Environmental News Daily*, 3/5/98

NC Riparian Protection -- Starting in January North Carolina environmental officials began enforcing new rules that forbid property owners from cutting down trees within 30 feet of state waterways. Lin Xu of the state Division of Water Quality said trees serve as buffers filtering pollution that would otherwise run into the Neuse River. Sources: James Shiffer, *Raleigh News & Observer*, 1/22/98 and National Journal's *GREENWIRE, The Environmental News Daily*, 1/27/98

OK Hog Moratorium -- A House panel of the Oklahoma Legislature has approved a one-year moratorium on the expansion of corporate hog farming operations. The measure would block construction of new farms containing more than 5,000 hogs to give the state time to examine the impact of corporate hog farms. The moratorium would be in effect up to one-year or until the legislature develops "adequate" environmental and public health protections. Senate President Pro Tempore Stratton Taylor (D) backs the proposed moratorium as a "good first step," but he stressed that the legislature must also address regulations for the poultry industry. *Oklahoma Pork Producers* spokesperson Bill Wiseman said the moratorium was a "politically attractive" move and said that no evidence had linked groundwater contamination to the hog industry. He said that imposing the proposed ban on hog farms that already had permit applications pending with the state Agriculture Dept. would be unconstitutional. Meanwhile, the Oklahoma Board of Agriculture on 2/18/98 unanimously approved a fine of more than \$88,000 against *Seaboard Farms Inc.* for failing to properly dispose of dead hogs at more than 30 of its "panhandle" farms. The board alleged the decomposing carcasses threatened groundwater and public health. Sources: *USA Today*, 2/20/98; Mick Hinton, *Oklahoma City Daily Oklahoman*, 2/19/98; Danny Boyd, *Oklahoma City Daily Oklahoman*, 2/19/98; and National Journal's *GREENWIRE, The Environmental News Daily*, 2/20/98.

PA Tire Fire -- An illegal tire dump

located on top of an aquifer that supplies water to three Pennsylvania towns was set afire by an arsonist on 2/7/98. The fire, which burned 1,200 truck tires, caused some ground contamination, but tire-oil runoff, which could have contaminated the water supply for decades, was "kept to a minimum," according to Richland Township Fire Marshall Jeff Stump. Truckloads of soil will have to be removed from the site, but the "quick action" of firefighters and the separation of the tires into piles limited the damage. Daniel Carr, who discarded the tires, is already serving 7-14 years in prison for a 1996 tire fire that disrupted traffic on Interstate 95 for months. The *Goodman Group*, which leased the site to Carr, was supposed to have removed the tires by 8/31/97. Sources: Richard Sabatini, *Philadelphia Inquirer*, 2/10/98 and National Journal's GREENWIRE, *The Environmental News Daily*, 2/10/98



Satellite Surveillance — Satellite photography is increasingly being used to monitor compliance with land-use regulations, but some say the use of such surveillance is an invasion of privacy, reports the *Wall Street Journal*. State and local agencies are using satellite imagery for "everything from surveying illicit crops to detecting unauthorized building." By comparing satellite photos with its permit data-base, the Arizona Dept. of Water Resources can detect farmers who are exceeding water-use rules and has fined farmers for growing cotton without irrigation permits. Larry Griggers of the Georgia Dept. of Revenue, which uses satellites to monitor the state for unreported timber cutting, said the practice saves money on other types of enforcement. *Georgia-Pacific Corp.* and other timber companies support the practice, "saying it will help to disprove accusations that they have

secretly cut trees without paying taxes." Longmont, CO-based *Earthwatch Inc.* also said it plans to launch a satellite next year. The *American Bar Association* has organized a task force to determine whether the practice violates the Fourth Amendment's protections against unreasonable searches. In 1986, the Supreme Court ruled that the USEPA was permitted to photograph the *Dow Chemical* plant in Midland, Michigan, and said the practice "might be constitutionally proscribed absent a warrant". Sources: Ross Kerber, *Wall Street Journal*, 1/27/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 1/27/98

Southern Water Compact — "In what is being hailed as an historic meeting," the governors of Alabama, Georgia and Florida have signed two interstate water compacts dividing up the waters of rivers flowing through the tri-state region. One compact will guarantee each state a minimum flow of water from the Chattahoochee, Flint and Apalachicola rivers, while the other will allocate water from the Alabama, Coosa and Tallapoosa rivers. Each compact will have a commission -- made of a member from each state and from the federal government -- to negotiate how much water each state will get. Bob Kerr of the Georgia Department of Natural Resources said that the allocations will be worked out by the end of the year, and that the compacts will assure Georgia the water it needs for growth. The compacts were approved by the three state legislatures last year and ratified by Congress and signed by Pres. Bill Clinton in 11/97. They are the nation's first interstate water agreements since the early 1970s and the "first ever" in the South. Sources: Charles Seabrook, *Atlanta Constitution*, 2/17/98 and National Journal's GREENWIRE, *The Environmental News Daily*, 2/18/98

Taxpayers Pay Pollution Costs-- Fees paid by Virginia industries to discharge waste into rivers cover only 8% of the costs of regulating the pollution, according to a state Dept. of Environmental Quality (DEQ) report. The report, prepared for the 1998 General Assembly, found that state and federal tax dollars pay 92% of the costs of issuing permits, monitoring rivers and

related activities. In Maryland, Tennessee and North Carolina, industry pays 67%, 31% and 24%, respectively. Only in Kentucky, where state and federal taxes pay 94% of the costs, do industries pay less than in Virginia. Environmental groups say Virginia industries should have to pay more. A five-year water-pollution permit that costs \$8,000 in Virginia would cost \$45,000 in Maryland. State Sen. Patricia Ticer (D) on 1/23/98 announced plans to introduce legislation that would increase water pollution permit fees, saying the "everyday taxpayer" is paying too much of the costs. Her bill would require the DEQ to raise fees to cover 25% of costs in 1999 and 50% by 2003. Source: Rex Springston, *Richmond Times-Dispatch*, 1/26/98 and National Journal's GREENWIRE, *The Environmental News Daily*, 1/26/98

WA Waterway Cleanup — The Washington Dept. of Ecology has been put on a 15-year schedule to develop clean-up plans for 666 polluted waterways as the result of a "landmark" settlement of a 1991 lawsuit filed against the agency and the USEPA. Portland, OR-based *Northwest Environmental Advocates* and the *Northwest Environmental Defense Center* alleged the agencies violated the federal Clean Water Act by failing to assess and restore water quality. Sources: Laura Coffey, *Seattle Daily Journal of Commerce*, 1/27/98 and National Journal's GREENWIRE, *The Environmental News Daily*, 2/3/98.

Yellowstone Bioprospecting Suit - Yellowstone National Park and Interior Dept. officials illegally "struck a secret deal" with a California firm to mine and sell the park's microbial resources, according to a lawsuit filed in early March in Washington, DC, by a coalition of environmental and other groups. The complaint alleges that the deal to harvest commercially valuable microbes in the park was made through a research and development agreement to avoid the environmental review required by the National Environmental Policy Act. Plaintiffs' attorney Joseph Mendelson, of the DC-based *International Center for Technology Assessment*, argues that federal law bars any natural resources from being removed from national parks. Mendelson said, "The precedent set by this agreement threatens not only Yellowstone, but all of our parks" The "bio-prospecting"

deal completed in 8/97 gives *Diversa Inc.*, a San Diego bio-tech firm, the right to take microbes from Yellowstones's geysers and patent the exclusive rights from any products or processes resulting from the effort. In return, the park would receive "a small yearly fee" and a confidential percentage of royalties. Sources: Smith/Siegel, *Salt Lake Tribune*, 3/6/98 and Kathleen Schmidt, *Medill News Service/Billings Gazette*, 3/6/98; and National Journal's *GREENWIRE, The Environmental News Daily*, 11/11/97.

Climate Change Attitude Shift

"In a major shift in the debate over global warming, a growing number of leading oil company executives are acknowledging that fossil fuels may be changing the world's climate and have begun focusing on how to reduce greenhouse gas emissions," reports the *Washington Post*. Although most industry officials oppose the "sweeping" agreement negotiated at the 12/97 climate change conference in Kyoto, Japan, and many energy executives dismiss the science that suggests global warming, recent statements from oil company executives indicate that the lines between industry and environmentalists are becoming blurred.

Mark Moody-Stuart of *Royal Dutch Shell* at a February meeting with energy executives in Houston said, "I find myself increasingly persuaded that a climate effect may be occurring." John Browne of *British Petroleum* said the industry had moved "beyond denial." According to *Texaco* spokesperson Christopher Gidez, company head Peter Bijur said the debate was more about remaining competitive than about the science behind the issue. Gidez said, "It's about what companies are doing ...to look at the next generation of technologies and improving efficiencies of operations, reducing emissions of refineries."

Daniel Yergin of *Cambridge Energy Research Associates* attributed the shift to increasing social awareness among corporations. Evolving attitudes have also been noted among

utilities and automakers that want to help guide the rules emerging from the Kyoto talks, according to Daniel Dudek of the *Environmental Defense Fund*. Although European oil companies were first to accept concerns about climate change, Red Cavaney, head of the *American Petroleum Institute* said the U.S. industry is now acknowledging "different views" on the subject.

"In the debate over global warming, there has been a widespread assumption that if humans are changing the earth's climate, the effects will be felt gradually and smoothly, making it easier to adapt to the change." But a "growing accumulation of geological evidence is making it ever clearer" that the climate has changed abruptly in the past, and might do so again in the future, reports the *New York Times*.

American scientists led by Jeffrey Severinghaus of the *University of Rhode Island* has studied corings of ancient ice in Greenland and "determined that when the world began its final ascent out of the last ice age ... temperatures in Greenland initially spiked upward by about 9 to 18°F ... in, at most, mere decades and probably less than a single decade."

Many scientists are saying that the climate may adapt slowly to changes until a threshold is reached, at which point dramatic shifts in climate could occur. Speculating about human-induced climate change, Kendrick Taylor, a paleoclimatologist at the *Desert Research Institute* of Nevada at Reno, said, "If we find out that we're far away from one of these thresholds, we might be able to change atmospheric carbon dioxide a lot and not have any impact. On the other hand, we may find we're very close to one of these thresholds".

Scientists say only satellites can provide them with the information they need to predict how the climate will respond to the combination of natural occurrences and human impacts such as the emission of greenhouse gases.

With a satellite system known as the *Earth Observing System (EOS)*, NASA will focus on global climate change. Among the information the system is expected to provide are data on aerosols and cloud properties. Researchers

say that lack of such data is the "biggest impediment" of using computer models to simulate and predict the behavior of the global climate. The launch of AM-1, the "flagship" of the EOS, is planned for 6/30/98.

Meanwhile, according to scientists at *Louisiana Tech University* the "sequestration of carbon," using trees to soak up carbon dioxide from the atmosphere, could be a "significant weapon" to combat climate change,. Studies indicate that increasing the sequestration of carbon would cost only a few dollars per ton of the gas -- which is "considerably cheaper" than the cost of controlling industrial emissions of carbon dioxide.

A researcher at the *Massachusetts Institute of Technology* has also noted a link between the frequency of lightning and global temperature. Earle Williams, who has assembled comprehensive data on global lightning activity, said the connection could be used to track trends in global warming.

Sources: William Stevens, *New York Times*, 2/17/98; Martha Hamilton, *Washington Post*, 3/3/98; John Cushman, *New York Times* 3/3/98; Robert Cowen, *Christian Science Monitor* 3/3/98; and National Journal's *GREENWIRE, The Environmental News Daily*, 1/27, 3/3/98

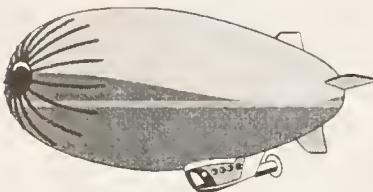
Ships vs Boats

Carl von Gablenz, a German a lawyer-cum-logistics expert, thinks blimps can provide a reasonable alternative to ships for carrying heavy cargo. How else, he asks, can you get a 160-ton power-plant turbine from Germany to the Amazon jungle without reinforcing roads, moving bridges and having to manhandle it on and off ships?

Mr. von Gablenz and a handful of fellow airship enthusiasts are designing a helium filled blimp, just outside of Frankfort, that could revolutionize the global heavy-haulage business. Their *Cargo Lifter 160*, an 808-foot long, 201-foot-wide *Queen Mary* of the skies would be able to hoist heavy, bulky objects such as 160-ton turbines or an empty *Boeing 747*, wings and all, 10 times faster and an average 20% less expensively. The *Cargo Lifter*'s cargo

bay would hold 520 cubic yards.

An even bigger airship still on the drawing board would haul as much as 450 tons - equivalent to a fully loaded, fully fueled 747-400. Such unprecedented carrying capacity could lead to challenges not only in the way companies deliver things, but in the way they design and build them, too. "Lighter-than-air technology allows you to think big," says Mr. von Gablenz.



If all this makes you think Mr. von Gablenz is getting lightheaded, you're not alone. Something he calls the "giggle factor" has plagued airship research ever since the hydrogen-fueled Hindenburg, a rigid-framed dirigible as opposed to the less rigid blimp, burned in 1937. The helium that gives blimps their lift doesn't burn, while hydrogen combines explosively with oxygen. Airship engineers focus on advertising and passenger transport also hasn't helped.

Blimps were used in Oregon to transport logs in the 1970s, and the U.S. military has always had a small fleet. *Pan Atlantic Aerospace Corp.*, a Canadian research company, has drawn up plans for a 1,500 foot airship that could lift 500 tons and be competitive with ships and trucks. But so far, most cargo blimps have never left the drawing board. "The hard part is coming up with the money for the first airship," says *Pan Atlantic* Chairman Fred Ferguson. Getting Federal Aviation Administration approval in the U.S. is also a hurdle because there are no design standards in place. All the same, airships appear to be on the comeback, helped in part by the U.S. government's 1996 decision to sell off its strategic helium reserve, as well as by the commercial availability of new, lighter weight materials.

CargoLifter AG, just an idea three years ago, has moved at fever pitch to raise capital, rally partners and get

a prototype aloft. Mr. von Gablenz has told shareholders the company would start construction of its first hangar near Berlin and float a prototype blimp in May. It just signed *Praxair Corp.* of the U.S., the world's largest helium producer, to supply it with helium and technology. From 1999 onward, the company wants to build three to four *CargoLifters* a year. Its goal: to operate 44 blimps and capture 1-2% of the \$9 billion international market in oversize cargo--items over 100 tons and longer than 66 feet--by 2010. It aims to go public around 2000, show a positive cash flow in 2001 and break even on its investment in 2002. "It's a tall order," acknowledges Mr. von Gablenz, "but the risk is becoming more calculable." *Commerzbank AG*, as well as the corporate finance unit of *ABB AG* and increasing numbers of small holders agree.

Unlike most German start-ups, *CargoLifter* began as a joint stock company. It has signed up 835 shareholders, making it one of the most popular nonlisted companies in Germany. Some 60% is held by individuals, most of whom buy shares over the Internet. The unlisted stock sells at a fixed 27.50 marks (\$15.44) a share. Several big engineering, shipping and logistics companies were among the first shareholders -- both to profit from the investment and to book space early. German engineering heavyweights including *ABB*, *Siemens AG* and *Thyssen AG* see a potential competitive advantage in speeding deliveries to remote customers.

A full 50% of *CargoLifter*'s carrying capacity for the first three years is reserved for shareholders. But other potential clients are calling up to reserve space Mr. von Gablenz says. The U.S. Federal Emergency Management Administration and the United Nations have asked about using cargo blimps in disaster relief, auto makers about moving assembly lines and franchisers about delivering prefabricated restaurants.

Perhaps one day we'll see blimp-loads of coal and grain flying directly between points of origin and points of use, replacing some of the barges which now crowd our large rivers.

Interior Budget Proposal

The Interior Department budget proposal released by President Clinton for FY99 has scored points in the environmental community, but it could do even more, some conservationists are saying. "It's not everything that we would want," said Mary Beth Beetham, legislative associate for *Defenders of Wildlife*. But, "we also really believe it's the best natural resources budget that's come out of the administration in years."

The administration "raised the bar this year" by channeling more funding to the four land management agencies, particularly for working on their massive maintenance backlogs, said Sue Gunn, director of budget and appropriations for the *Wilderness Society*. "At last they're beginning to listen to the enviros, and I haven't felt that previously," she said.

The total \$8.1 billion Interior spending proposal marks a \$491 million or 6% increase over the 1998 enacted level. It starts two five-year programs to increase funding for maintenance and construction needs within the agencies and further contribute to the *Land and Water Conservation Fund (LWCF)* for "priority" land purchases.

The Interior Department is requesting a total of \$546 million for maintenance in FY99, which reflects an increase of \$82 million from last year. Also, the department plans to enact a policy of organizing safety and repair needs into prioritized lists to submit during annual budget requests.

House Appropriations Interior Subcommittee Chairman Ralph Regula (R/OH) at a hearing earlier in February estimated the backlog for the National Park Service, Fish and Wildlife Service, Bureau of Land Management and Forest Service at \$12.8 billion.

The administration also requested about \$270 million to go to the LWCF for land acquisition related to restoration projects under the four land management agencies. The "priority" land purchases in FY99 would include land in the Florida Everglades, Southern California and northeastern states. The department plans to allocate a total of \$1.9 billion from LWCF to the agencies over five years.

"They're kind of remembering the importance of LWCF and they've highlighted it, even though they haven't fully funded it," said Beetham. The LWCF may be funded up to \$900 million annually through off-shore oil and gas lease receipts, but for the past few years has received much less. Since much of the funds have been used for other purposes, an \$11 billion credit has accumulated, according to congressional sources.

Funding the LWCF at below the maximum amount allowed "forces parks to put off proactive natural resource protection activities," said Tom Kiernan, president of the *National Parks and Conservation Association* (NPCA). Last year, \$699 million was appropriated to the fund in the FY98 Interior and related agencies budget as a one-time allocation ordered under the bipartisan budget agreement.

Details of the various proposed agency budgets follow [Interior Department Budget is shown in millions of dollars FY95 (actual), FY96 (actual), FY97 (actual), FY98 (enacted), and FY99 (proposed)]:

Bureau of Land Management (BLM)

	FY95	FY96	FY97	FY98	FY99
Total Budget	1,182	1,157	1,196	1,232	1,326
Land/Resource Mgmt	597	567	576	583	660
Forest Resources	7	5	6	6	6
Riparian/Aquatic Resources	20	14	16	16	20
Threatened/Endangered Species	18	16	17	17	18
Rec/Cult Res/Wilderness Mgmt	51	44	46	49	50
Recreation Resources	26	26	28	31	32
Cult. Resources	12	11	12	13	13
Wilderness Resources	13	14	15	16	16
Resource Plans/Analysis	10	10	10	13	13
Realty/Ownership Mgmt.	73	69	70	71	73
Wild Horses/Burros	17	15	16	16	19
Facilities Maintenance	39	30	33	35	42

Hazardous Mat'ls Mgmt.	17	15	15	15	16
Rec. Operations (fees)	1	4	5	5	5
Workforce/Organization	120	116	116	117	119
Construction	12	3	4	3	4
Payments in Lieu of Taxes	104	114	114	120	120
OR/CA grant lands	97	97	101	101	99
Land Acquisition (LWCF)	15	13	10	11	15
Central HAZMAT Fund	13	10	12	12	10
Range Improvements	10	9	9	9	10
Fire fighting	236	236	252	280	298
Trusts/Permanent Appropriations	95	89	247	94	92

U.S. Fish and Wildlife Service (FWS)

	FY95	FY96	FY97	FY98	FY99
Total Budget	1,284	1,190	1,287	1,361	1,422
Resource Management	513	506	524	595	676
Ecological Services	138	125	136	146	188
Endangered Species	70	60	67	77	113
Refuges/Wildlife	168	169	179	221	246
Fisheries	38	37	37	38	39
Gen. Administration	91	94	98	104	110
Construction	54	38	43	45	37
Wetlands Acquisition	9	9	10	12	15
Land Acquisition (LWCF)	67	37	44	63	61
Natural Res. Damage Assessment	7	4	4	4	8
Endangered Species Cons. Fund	9	8	14	14	17
Wildlife Cons./Appreciation	2	1	1	1	1
Trusts/Permanent Appropriations	613	585	633	616	596

National Park Service (NPS)

	FY95	FY96	FY97	FY98	FY99
Total Budget	1,470	1,457	1,571	1,882	2,001
Park System Operations	1,078	1,082	1,152	1,246	1,321

Resource Stewardship.	172	171	193	221	228
Visitor Services	250	252	272	303	301
Maintenance	347	349	368	384	446
Park Support	221	221	229	240	241
Everglades Restoration Fund				120	128
National. Recreation/Preservation	43	38	38	44	47
Land Acquisition (LWCF)	88	49	54	143	138
Historical Preservation Fund	41	36	37	41	101
Construction	185	145	163	215	175
Trusts/Permanent Appropriations	80	96	149	223	248
Rescission, LWCF Contr. Auth.	-30	-30	-30	-30	-30

U.S. Geological Survey

	FY95	FY96	FY97	FY98	FY99
Surveys/Investigations/Research	571	730	740	760	807

Office of Surface Mining

	FY95	FY96	FY97	FY98	FY99
Reclamation/Enforcement	293	270	303	309	347
Regulation/technology	110	96	95	95	94
Abandoned Mine Reclamation Fund	182	174	177	178	183

Minerals Management Service

	FY95	FY96	FY97	FY98	FY99
Total Budget	671	701	707	799	833
OCS Lands	87	95	95	103	111
Royalty Management	68	70	70	69	72
Gen. Administration	33	33	33	31	33
Oil Spill Research	6	6	6	6	6

Bureau of Reclamation

	FY95	FY96	FY97	FY98	FY99
Total Budget	838	869	811	878	945
Water/Related Resources	731	697	679	693	666
Loan Program	10	12	13	10	12

Gen. Administrative Expenses	54	48	46	48	48
Working Capital Fund	-3	0	0	0	-26
CVP Restoration Fund	45	47	38	33	49
CA Bay-Delta Ecosystem Rest.	0	0	0	85	143

Central Utah Project. Compl. Acct.

	FY95	FY96	FY97	FY98	FY99
Total Budget	40	45	44	41	42
Construction	29	26	32	30	28
Reclamation./Mitigation/Conserv.	11	19	12	12	12

Source: *Land Letter*, 2/16/98, Vol. 17, No. 4

Religion and the Environment

"Americans of all faiths increasingly are looking at the environment through a spiritual lens," reports the *Washington Post*. Ecumenical Patriarch Bartholomew I, the spiritual leader of the Orthodox Church, in 11/97 declared the degradation of the environment a sin. And now faith-based activists are beginning to incorporate environmental preservation "into long-standing social justice agendas."

Underpinning the faith-based environmental trend is, in most cases, a "theological shift" from the notion that people pass through a temporal world to the idea that the world was entrusted to humans by God to be safeguarded. Litter, oil spills, tainted drinking water, deforestation, and polluted runoff are being sermonized "not simply [as] legal infractions" but as morally wrong.

Paul Gorman, of the NY-based *National Religious Partnership for the Environment* said, "What's really happening here is that the ... environmental problem is calling us to rediscover some of the most fundamental teachings of every major faith tradition".

Source: Carlyle Murphy, *Washington Post*, 2/3/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 2/3/98

Public/Congress Environmental Attitudes Differ

A survey of attitudes about environmental issues among senior congressional staff members reveals large differences between their opinions as a group and those of the general public, according to a recent poll conducted by the McLean, VA-based research firm Wirthlin Worldwide.

For example, in 8/97, one in four Americans said it is acceptable to sacrifice economic growth in order to protect the environment, a result the pollsters called "surprisingly high" and the most pro-environmental reading of the firm's annual poll since 1992. Seventy percent said it does not have to be a choice between the two. That survey, which questioned 1,040 adults nationwide, had a margin of error of +/-3%.

But later last fall, the pollsters for the first time posed the same questions to 151 senior congressional staffers. Only 4%, all Democrats, said protecting the environment requires sacrificing economic growth, while 94% said the nation can achieve both goals without having to choose.

In addition, the public was found to be "much more supportive" of increased environmental regulation than Congress. In general, 49% of the public said there is too little environmental regulation, while only 13% of congressional staffers said the same. Some 47% of congressional staffers said there was too much regulation, compared with 21% of the public.

Congressional offices also gave "moderate" grades to government and businesses for their performance on environmental protection. On a scale of 1 to 10, with 1 being the worst and 10 being the best, congressional staffers gave business an average rating of 6.2 and government a 5.8. The public rated business and government performance nearly the same, at 5.6 and 5.7, respectively. The chart below breaks down responses by party affiliation:

Do you think there is too much, too little, or about the right amount of government regulation and involvement in the area of environmental

protection?

	Congress	General Public
GOP:		
Too much	82%	33%
Too little	1%	40%
Right amount	12%	26%
Democrat:		
Too much	10%	12%
Too little	26%	53%
Right amount	56%	34%
Independent:		
Too much		18%
Too little		60%
Right amount		20%

[On a scale of one to 10], how good a job do you feel (businesses or government) are doing in terms of pollution control and environmental performance?

	Congress	General Public
GOP:		
Business	7.0	5.7
Government	5.6	5.7
Democrat:		
Business	5.4	5.7
Government	6.0	5.1
Independent:		
Business		5.3
Government		6.4

Source: National Journal's GREENWIRE, *The Environmental News Daily*, 1/28/98

Riparian Habitat Restoration Video

The U.S. Fish and Wildlife Service recently contracted with *Virginia Tech* to produce a half hour video on riparian habitat restoration and its benefits to landowners and biological resources. The focus of the video is the Southeastern U.S., but footage can include other geographic areas as well.

Dr. Dick Neves, Project Leader, has requested information from anyone on any existing videos that address riparian habitats, and whether there are good case studies in the Southeast or lower Midwest that are suitable for a videography crew to get on-site footage and interviews. Neves is seeking before and after footage, and examples of quantifiable changes in habitat quality and species diversity/abundance as a result of restoration actions.

If you or your agency or organization

knows of or has access to such videos or projects please contact Dr. Neves at: Department of Fisheries and Wildlife Sciences, College of Forestry and Wildlife Resources, Blacksburg, VA 24061-0321, (540) 231-5573 or Fax (540) 231-7580.

River Biology Curriculum Guide Published

The *Rivers Curriculum Project* of Southern Illinois University Edwardsville (SIUE), an educational organization working to increase scientific literacy through river study, announces the publication of its *Rivers Biology Curriculum Guide*. Developed under a *National Science Foundation* grant and published by Addison-Wesley, the *Guide* is sure to be a teacher favorite! Focusing on hands-on stream-monitoring activities, the *Guide* incorporates the study of living organisms in rivers, streams, or lakes which can be easily captured or documented to alert students to the connections between living organisms, water quality, and overall environmental quality. By stressing experiential educational activities, the *Rivers Biology Curriculum Guide* affirms the legitimacy of local activities and hands-on learning.

Also available through the Rivers Project are three other curriculum guides: Chemistry (testing river water and analyzing data to explore the impact of society on the quality of North American rivers), Earth Science (evaluating the physical features of a river system and exploring clues to historical development within a local area) and Geography (understanding the link between people and rivers--from human migration to industrial development). Language Arts and Mathematics Guides will be available soon. All Rivers Project Guides are available through the Rivers Project for \$23.95.

The *SIUE Rivers Curriculum Project* (SIUE) will also be conducting its sixth annual summer training on the campus of *North Park University* in Chicago, IL (July 19-24, in cooperation with the Friends of the Chicago River) and on the campus of SIUE (August 2-7). In an effort to increase scientific literacy through river study

and promote interdisciplinary teaching, teachers participating in the Rivers Project training will focus on one of the six curriculum areas (noted above). Project Trainers, some of who have contributed to the curriculum units, are practicing Rivers Project teachers who are supported by the University and other professionals.

Teachers and other professional interested in working with water testing education can attend the training scheduled for July 19-24 at *North Park University* in Chicago, which will focus training on urban rivers, or at SIUE. Tuition (two semester hours, Summer 1998) and curricular materials will be available. A non-credit option is also available. Lodging and food will be available at a low cost. Interdisciplinary teams from the same school are encouraged.

Contact: The Curriculum Rivers Project (618) 692-3788, FAX (618) 692-3359, e-mail: rivers@siue.edu, or via the World Wide Web at URL <http://www.siue.edu/OSME/river>

Fish Guts Software

New software entitled "*Fish Guts: A Multimedia Guide to the Art and Science of Fish Anatomy, Health, and Necropsy*" is available. This is an interactive program that uses sound, color photographs, and video to review anatomy and necropsy techniques. The program is available on CD ROM format for \$179 (plus \$12 shipping) from the *University of Maryland*, Dept. of Pathology, Aquatic Pathobiology Center, 10 South Pine St., Baltimore, MD 21201-1192. More information on the program is available on the World Wide Web at: www.som1.ab.umd.edu/AquaticPath/fg

Laserguns for Cormorants Control

The *DESMAN Company* in France has designed a laser to chase away cormorants and herons without harming them. Its operating range is up to 2.5 km (1.5 miles), and it can be used directly at the roosting site. According to manufacturers, the *DESMAN* Laser

projects only a laser beam - no bullets and no lead shot - and its usage is silent and in no way damages the environment or the bird. It can be rented or purchased without authorization.

This method of startling birds optically was developed in 1987 by *DESMAN* and has been well received by civic authorities, governments and private individuals. The birds are startled by the strong contrast between the ambient light and the red laser beam, or its blur, which the user aims at the bird under the required light conditions. The *DESMAN* laser is said to be most effec-



"Double-crested Cormorant"

tive at lower light levels - overcast sky, dusk and dawn. Its use in very strong light is not effective. *DESMAN* says the laser has a wide operating range, is simple in its usage, produces no noise, in no way harms the birds; and the birds do not become used to the laser. Roosting sites are cleared with up to 90% effectiveness.

DESMAN says to just wait for the required light conditions, shoulder the *DESMAN* Laser, take aim, apply the trigger for as long as necessary to disperse the bird or birds, and continue the method until the birds have left their roosting sites. The apparatus looks like a typical firearm, is 100 cm long, weighs about 6 kg (with batteries), operates for about 3 hrs on a battery charge, has a 3x to 9x scope, and conforms to the specification of the European Standard EN 60825. There is no injury or shock to the bird's vision. Purchase and use are not restricted. For further information contact: *DESMAN S.A.R.L.*, Ste Marie de Campan, 65710 CAMPAN, FRANCE, Telephone: +33.5.62.91.84.32; Fax: +33.5.62.91.86.95; or email: Desman@wanadoo.fr

Meetings of Interest

April 29-May 3: Rivers - The Future Frontier, Anchorage, AK. Contact the River Management Society at (406) 549-0514; email: rms@igc.apc.org

May 3-6: Watershed Management: Moving from Theory to Implementation, Denver, CO. Water Environment Federation. (703) 684-2400 or email confinfo@wef.org

May 7-8: Symposium on the Harvest, Trade and Conservation of North American Paddlefish and Sturgeon, Chattanooga Clarion Hotel, Chattanooga, TN. Sponsored by the Southeast Aquatic Research Institute (SARI), the Tennessee Aquarium and TRAFFIC North America. Contact: Dr. George W. Benz, SARI, 817-B N. Market St., Chattanooga, TN 37405, (423) 785-4073 or email GWB@tennis.org

May 17-22: Flood Mitigation Technology: Times Are Changing, Milwaukee, WI. Sponsored by the Association of State Floodplain Managers. Contact: Leslie A. Bond, P.O. Box 427, High Rolls, NM 88325, (505) 682-1359, Fax (505)

682-1369 or email bond@wazoo.com

May 26-30: Specialty Conference on Rangeland Management and Water Resources, Reno, NV. An interdisciplinary forum to exchange ideas about how to better understand and respond



to conditions and trends related to water in grassland ecosystems. Sponsored by the American Water Resources Association and the Society for Range Management. Contact: AWRA, 950 Herndon Parkway, Suite 300, Herndon, VA 20170-5531, (703) 904-1225 or Fax (703) 904-1228.

June 8-12: 19th Annual Meeting of the Society of Wetland Scientists, Anchorage, AK. Contact: Terry Brock,

Box 22014, Juneau, AK 99802, (907) 586-7863, FAX (907) 586-7922, e-mail: tbrock@ptialaska.net or visit the SWS web page at <http://www.sws.org>

June 8-12: GCIP Mississippi River Hydrometeorology Conference "Predicting Climate Variability and its Implications for Water Resource Management. Regal Riverfront Hotel, St. Louis, MO.

June 23-28: First International Ictalurid Symposium - Catfish 2000 Davenport, IA. Contact Steve Eder, Missouri Dept. of Conservation, P.O. Box 180, Jefferson City, MO 65109-0180, (573) 751-4115, FAX (573) 526-4047, <http://www.fw.umn.edu/ncdafs/cf2000>.

August 23-27: 128th Annual Meeting of the American Fisheries Society, "Challenges for the New Millennium: Shaping the Future of Fisheries Science and the Fisheries Profession, Harford Civic Center, Hartford, CT. Contact: Paul Brouha, (302) 897-8617, Ext. 209.

September ?: 88th Annual Meeting of the International Association of Fish and Wildlife Agencies. Contact: Georgia Department of Natural Resources.

Congressional Action Pertinent to the Mississippi River Basin

No New Legislation or Legislative Action - See Volume 7, Number 1



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River Crossings

Volume 7

May/June 1998

Number 3

Paddlefish/Sturgeon Closure Lies in State Hands

The issue of whether or not to close commercial fishing seasons for paddlefish and sturgeon species in the Mississippi River Basin was referred back to the respective states by MICRA's Executive Board at their 5/12-13 meeting in St. Louis. The



"paddlefish"

Board recommended, however, that the MICRA Chairman send a letter to all member states calling their attention to the possible increased harvest of these species to satisfy the demand for caviar, and the potential threats of this situation to paddlefish and sturgeon stocks. The Board also directed the MICRA chairman to encourage the states to be proactive with regard to any signs of over-exploitation, taking appropriate action when necessary to protect the species.

MICRA does not have any regulatory authority, but strong recommendations coming from MICRA can have a significant influence on state regulators. MICRA's Paddlefish/Sturgeon Committee at their November meeting had recommended a basinwide closure of

commercial sturgeon fishing, but could not reach consensus on a similar closure for paddlefish. The Committee then referred the issue to the parent organization for action.

Since the recent collapse of sturgeon stocks in the Caspian Sea, concerns have been raised that domestic paddlefish and sturgeon stocks will be over harvested to meet the worldwide demand for caviar -- most of which is centered in this country in Los Angeles and New York City. Paddlefish eggs have already been found to be mixed with Caspian Sea caviar and marketed in this country as the highly desired Caspian Sea *Sevruga* caviar. Consumers should beware!

A national symposium on the harvest, trade, and conservation of North American paddlefish and sturgeon; sponsored by TRAFFIC North America, the Tennessee Aquarium, and the Southeast Aquatic Research Institute;



"lake sturgeon"

was held in early May in Chattanooga, TN to address concerns for the species. Major issues facing resource managers are the lack of good population data, and habitat destruction. Since these species are not considered gamefish in many states and no meth-

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od exists to recover funding from the commercial sale and marketing of their parts and products, it is difficult for State or Federal agencies to access appropriate funding for management actions. Paddlefish and sturgeon thus exist well within the "no-mans land" of interurisidictional fishery resources.

Dennis Riecke, Fisheries Coordinator, for the Mississippi Dept. of Wildlife, Fish and Parks put it as well as anyone, "...the commercial freshwater species' are in limbo land as far as the federal and state governments are concerned. They are not a high priority in the USFWS unless they become rare and NMFS is not really concerned about them as there are too many marine stocks at risk. There needs to be a funding source for states to use...I think the caviar companies need to fund some research on paddlefish and sturgeon and/or use whatever political clout they have to advocate for funding help. The sad reality in Mississippi is this -- we sold 862 commercial licenses last year to 3 groups of people (anglers, fish dealers and wholesale minnow dealers) versus 500,000 sport fish licenses. Where do you think our priorities should be?" The "...caviar companies who are profiting from our dwindling resource; who complain about the inaccuracy of data, yet they may be the ones supplying it; who are putting nothing back into the resource; who cater to a rich clientele... have not yet realized that in the absence of any solid scientific information, most state agencies will be cautious and close the fishery to preserve the fish, they are as shortsighted as the people fishing the Caspian Sea sturgeon to extinction. It's time for them to be proactive. At least the European firms have formed a trade organization, while the Americans can't agree on who will represent them."

Sport fishing equipment is subject to an excise tax that goes back into improving sport fish management and habitat through the Dingell-Johnson and Wallop-Breaux federal aid programs to the states. No such funding source exists for paddlefish and sturgeon management. Riecke is right, the stake-

holders of the caviar industry are going to have to step forward and be counted if they want to preserve the resource that supports their livelihood.

American Heritage Rivers Panel Named

Saying "America's great rivers are an important link between all parts of our nation's history and culture," President Clinton on 4/8 named a "diverse" panel of 12 members to select 10 troubled rivers for special federal protections and revitalization funding under his American Heritage Rivers Program. Under the Program 10 rivers will be selected from the 126 already nominated. According to the Council on Environmental Quality that list

was to be announced by the end of May.

The Administration has touted the Program as a community-based way to focus federal assistance to river communities that need restoration, economic planning or other help. Emphasis has been placed on the Program's voluntary features. Rivers cannot participate without full community

AMERICAN HERITAGE RIVERS



support, and the Program will not have major budgetary impacts because it is meant only to coordinate

River Crossings

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River Crossings is a mechanism for communication, information transfer, and coordination between agencies, groups and persons responsible for and/or interested in preserving and protecting the aquatic resources of the Mississippi River Drainage Basin through improved communication and management. Information provided by the newsletter, or opinions expressed in it by contributing authors are provided in the spirit of "open communication", and do not necessarily reflect the position of MICRA or any of its member States or Entities. Any comments related to "River Crossings" should be directed to the MICRA Chairman.

agencies and "help cut red tape" to provide river-related resources. Federal "river navigators" will be assigned to the participating communities and will direct them to appropriate resources, such as staff assistance, technical help, and grants. The White House had planned to announce the advisory team nearly a year ago, but the process "dragged on" as the administration tried to find members acceptable to Congress.

The panel includes:

- Chairman: Dayton Duncan of Walpole, NH. Duncan is a writer/producer of documentary films including the public TV series "Lewis and Clark: The Journey of the Corps of Discovery" and "The West";
- Gerald Galloway of Arlington, VA, dean of Faculty and Academic Programs at the Industrial College of the Armed Forces, National Defense University;
- William Graf of Tempe, AZ, professor of Geography at *Arizona State University* and president-elect of the *Association of American Geographers*;
- Anthony Grassi of Wilton, CT, chair of the environmental group *American Rivers*;
- Debbie Jaramillo of Santa Fe, NM, mayor of Santa Fe from 1994 to 1998;
- Charles Jordan of Portland, OR, a former member of the president's *Commission on American Outdoors*;
- Daniel Kemmis of Missoula, MT, director of the *Center for the Rocky Mountain West* at the *University of Montana*;
- David Olsen of Ventura, CA, president and chief executive officer of *Patagonia Inc.* in Ventura and has worked in marketing and business for *Magma Power Co.*;
- Yolanda Rivera of Old Saybrook, CT, chairwoman and chief executive officer of *Banana Kelly Community Improvement Association Inc.* and has been a community organizer for 26 years;
- Donald Sampson of Lake Oswego, OR, watershed department manager for *Columbia River Intertribal Fish Commission* of Portland;
- Maria Teran of El Paso, TX, general manager and vice president of *Sierra Machinery* in El Paso; and

- P. Kay Whitlock of San Jose, CA, assistant general manager of the *Santa Clara Valley Water District*.

Critics in Congress have challenged the rivers plan calling it a "land grab" that will threaten landowner rights and bring unwanted federal regulations. The House Resources Committee approved a bill to block the program, and Reps. Don Young (R/AK) and Helen Chenoweth (R/ID) pushed an unsuccessful lawsuit to kill the initiative.

Sources: Paul Bedard, *Washington Times*, 4/9/98 and National Journal's *GREENWIRE, The Environmental News Daily*, 4/9/98

Most Endangered Rivers

A section of the Columbia River in Washington state is the most endangered river in the U.S., according to an annual report released by the DC-based advocacy group *American Rivers*. The report ranks rivers that are threatened by development, dams, pollution and other problems.



American Rivers

The 51-mile Hanford Reach of the Columbia River has been "off-limits" to people since 1943 because it runs through the Hanford Nuclear Reservation, where plutonium was once processed for nuclear weapons. But now "local interests" hope to use the river to irrigate some 90,000 acres that the Dept. of Energy is planning to release from the Hanford Reservation. According to *American Rivers*, "Introducing agriculture and irrigation there would destroy the last of the Columbia River system's viable habitats for salmon" and would degrade the "spectacular landscape."

The other "most endangered" rivers and their key problems, follow in descending order:

- The Missouri River, last year's most endangered river, is threatened by dams and channelization in seven Midwestern states;
- Poultry waste endangers Maryland's Pocomoke River;
- Six small hydropower dams present problems for the Kern River in California;
- A proposed gold mine threatens Montana's Blackfoot River;
- Overuse by cities and farms jeopardizes the Colorado River Delta in Mexico;
- Excessive sewage discharges from the city of Atlanta pollute Georgia's Chattahoochee River;
- The lower Snake River in Washington state is threatened by dams;
- Hog manure endangers the Apple River in Wisconsin and Illinois; and
- Mining threatens Pinto Creek in Arizona.

American Rivers expressed particular concern over the spread of large hog and chicken farms and the "massive" amounts of manure they produce, calling them "the fastest growing, most devastating" threats to waterways.

Sources: *Land Letter* Vol. 17, NO. 8, 4/20/98; Traci Watson, *USA Today* 4/6/98; *Reuters/Washington Post*, 4/6/98; Heather Dewar, *Baltimore Sun*, 4/6/98; and National Journal's *GREENWIRE, The Environmental News Daily*, 4/6/98

White House Proposes Missouri River Restoration Plan

The Clinton Administration has proposed a new habitat restoration program for the lower Missouri River, supporting parts of a new program proposed by Sen. Christopher "Kit" Bond (R/MO) and Reps. Kenny Hulshof (R/MO) and Pat Danner (D/MO). The Administration asked Congress to direct the Corps of Engineers to modify riprap, dikes, and other river training structures between Sioux City, IA and St. Louis, MO to create habitat for river wildlife. The request came as part of the Administration's proposed Water Resources Development Act (WRDA) of 1998, which authorizes new water projects.

Sen. Bond and Reps. Hulshof and

Danner introduced S. 1399 and H.R. 2949 respectively, to create a five-year, \$50 million restoration fund for the lower Missouri and middle Mississippi rivers. The Administration's proposal does not set a funding goal, but instead asks the Corps to complete a one-year study to identify restoration projects along the Missouri.

"It's exciting to see the Corps and Clinton Administration support efforts to repair the Missouri River," said Scott Faber, Director of Floodplain Programs for *American Rivers*. "Millions of people will retrace Lewis and Clark's footsteps in the next few years, and I hope they'll be able to see more than a barge canal."

As noted in the previous article, *American Rivers* listed the Missouri as the nation's Second Most Endangered River this year, citing the impacts of dams and channelization on river habitat. Nearly all of the islands, sandbars, and wetlands that characterized the original Missouri River were eliminated to create a barge canal after World War II. "We can't restore the river that Lewis and Clark knew, but we can restore a river that Lewis and Clark would recognize," Faber said.

The new program would comple-

ment the existing Missouri River Mitigation Program, which acquires land from willing sellers and re-opens historic chutes and side channels. Sens. Bond, Bob Kerrey (D/NE), Charles Grassley (R/IA), Tom Harkin (D/IA), and Pat Roberts (R/KS), and Reps. Hulshof, Danner, Doug Bereuter (R/NE), Jon Christensen (R/NE), Tom Lathan (R/IA), Greg Ganske (R/IA), Jim Leach (R/IA), Karen McCarthy (D/MO), Ike Skelton (D/MO), Jim Talent (R/MO), and Bill Clay (D/MO) are all seeking \$10 million for the Mitigation Program for FY99, which starts on 10/1.

Source: Chad Smith, Missouri Monitor Vol. 1, No. 1, May 1998

White House WRDA Stresses Nonstructural Flood Control

The 1998 Water Resources Development Act (WRDA), expected to emerge on Capitol Hill later this year, will begin from a strong environmental stance, with the first proposal favoring ecosystem restoration over man-made structures as the best means of protecting against floods.

Lawmakers last month began consideration of the latest WRDA, legislation crafted every two years to fund Corps of Engineers' projects and of-

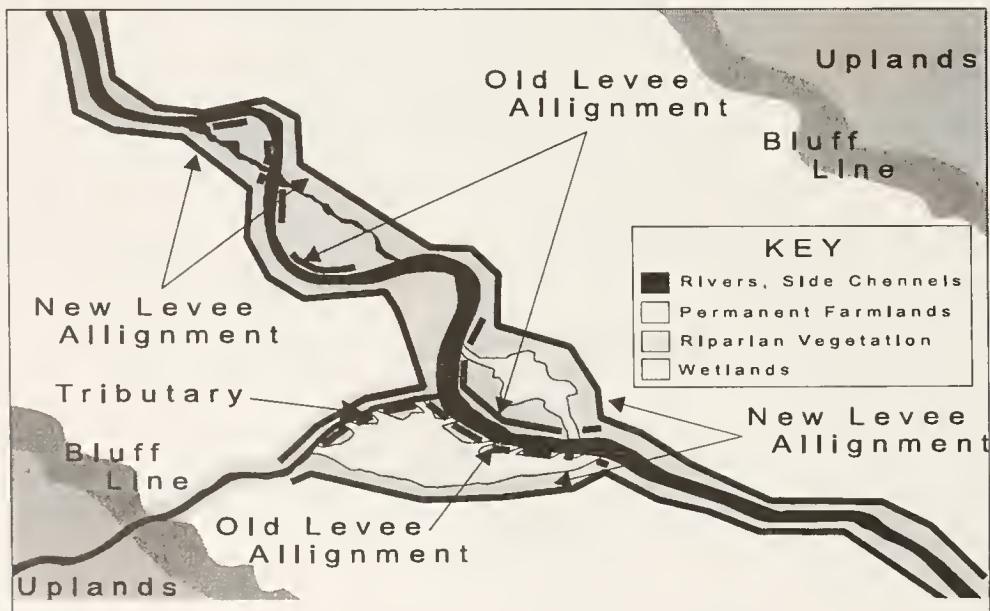
ten to revise policy for federal financing of such projects. The House Water Resources and Environment Subcommittee closed the last of three hearings on the matter on 4/28. Representatives of the *National Association of Dredging Contractors*, *National Association of Flood and Stormwater Management Agencies*, and other national interest groups began the series with their input; followed by House members pitching specific projects in their and surrounding districts; and finally by Army Corps officials outlining the Administration's proposals.

The \$1.46 billion White House version of WRDA, brought to light on 4/22, has as its "centerpiece" *Challenge 21*, a new program that "will provide the nation with a comprehensive tool for reducing flood damages," Acting Assistant Secretary of the Army (Civil Works) John Zirscky told the subcommittee.

Under the program, previewed as the Army Corps' only role in the Administration's Clean Water Action Plan unveiled in February, the use of "non-structural options" would be expanded "to achieve the dual purposes of flood damage reduction and the restoration of riverine ecosystems," Zirscky said. *Challenge 21* is not a top-down approach, but responds to communities who increasingly are calling for reduction or even elimination of flood-related losses and want to improve their environment. The nation is now spending over \$4 billion yearly for disaster recovery due to floods, he added.

The new program is slated to sop up \$325 million of the Army Corps budget over six years. At the same time, the White House plans in its FY99 budget to slash the agency's budget from \$4 billion to \$3.4 billion, and to hack its construction accounts by half from \$1.4 billion to \$784 million. The Administration budget and WRDA proposal call for new flood control projects only on California's American River and the Red River between North Dakota and Minnesota.

The funding plans combined are already causing lawmakers and interest groups to question what will become of more traditional concrete projects already in the pipeline. A *National*



WRDA *Challenge 21* projects might include realignment or relocation of levees to allow for greater flood water storage and conveyance, while restoring floodplain habitats.

Waterways Conference official noted that of 66 projects begun in the last few years — 54 added by Congress to 12 put forth by the Administration — only two are funded this year. Rep. Jo Ann Emerson (R/MO), whose district forms part of the Mississippi River's western shore, similarly expressed consternation at the new program in light of unfinished flood control projects.

Tom Chase, an official of the *American Association of Port Authorities*, noted that deep draft harbor projects are slated for about 10% of the funds actually needed. Moreover, many harbor projects include substantial efforts at environmental remediation similar to that called for in Challenge 21. The plan to improve the Houston port includes restoration of 2,000 acres of wetlands, Chase noted.

If the administration gets its way and Challenge 21 goes forward, much Army Corps work would involve relocation of families and businesses out of historic floodplains to allow swollen rivers to resume their natural flow. Additional work would include "floodproofing," flood warning systems and wetlands restoration, according to Zirscky.

The Army Corps has already signed a memorandum of agreement with the Federal Emergency Management Agency, the Agriculture and Interior departments, Environmental Protection Agency and the *Western Governors' Association* to begin coordination of the program. A typical Challenge 21 project might include an urban structure relocation led by FEMA and a rural wetlands restoration led by Agriculture's Natural Resources Conservation Service, Zirscky said.

Source: Tim Breen, *Land Letter*, Vol 17, No. 9, 5/4/98

President Clinton's Clean Water Action Plan

Recognizing that we have not fully achieved the goals of the Clean Water Act, President Clinton and Vice President Gore have announced a

far-reaching plan to protect and restore the Nation's rivers, lakes, wetlands, estuaries, and coastal waters. The Administration's Clean Water Action Plan: "Restoring and Protecting America's Waters", unveiled in February, contains more than 100 recommendations.

The President emphasized that "We must curtail the runoff from farms, from city streets, and from other diffuse sources that get into our waterways and pollute them. Every child deserves to grow up with water that is pure to drink, lakes that are safe for swimming, and rivers that are teeming with fish." To achieve these goals, the President has proposed an additional \$568 million in the FY99 budget and a total of \$2.3 billion in additional funds over the next five years (subject to congressional approval).

Polluted runoff is now the leading cause of water quality degradation in most of our surface waters. For example, 70% of our impaired rivers and streams are polluted by agricultural runoff or discharges and 40% of surveyed waters still do not meet their designated uses. Last October, on the 25th Anniversary of the Clean Water Act, Vice President Gore expressed the need to address these problems with a renewed effort to finally achieve the overall goal of the Clean Water Act -- "to restore the physical, chemical, and biological integrity of the Nation's waters." In this regard, the Vice President directed EPA and USDA, in conjunction with other federal agencies, to develop a Clean Water Action Plan, emphasizing the need to take a holistic, watershed approach.

The Action Plan focuses on (1) promoting water quality protection and restoration on a watershed basis and (2) strengthening core clean water programs to protect human health, increase natural resources stewardship, reduce polluted runoff, and provide citizens and officials with crucial information. It espouses more than 100 actions that will directly benefit people and ecosystems including:

- Restoring 25,000 miles of stream corridors on public lands by 2005;
- Achieving a net increase of 100,000 acres/yr of wetlands by

2005;

- Establishing 2 million miles of riparian buffers on agricultural lands by 2002;
- Establishing nutrient criteria (specifically for nitrogen and phosphorus) tailored to different water bodies and ecoregions; and
- Expanding coastal research, monitoring, and polluted runoff controls.

A watershed approach will encourage federal, state, and local officials to work together and, hopefully, to better understand the interdependence of their programs. Increased cooperation and integration among the different departments and agencies at all levels of government will also result in more effective and efficient implementation of programs and may be instrumental in overcoming some long-standing institutional barriers to achieving goals. The watershed approach also promotes accountability and involves the public, landowners, and business interests in the process.

The federal government will also take an active role in protecting and restoring water quality in the millions of acres of land that it holds in trust for the American people. For example, the Departments of Agriculture and the Interior will work together to develop a Unified National Federal Policy to promote watershed protection in areas managed or overseen by the U.S. Forest Service, U.S. Fish and Wildlife Service, Bureau of Land Management, Bureau of Reclamation, Office of Surface Mining, and other offices.

The Action Plan can be accessed at www.epa.gov/cleanwater or www.nhq.nrcs.usda.gov/cleanwater/, and copies can be obtained by calling (800) 490-9198.

Source: EPA Watershed Events, USEPA Office of Water (4501F), EPA 840-N-98-001, Spring 1998

Dam Removal

Signaling "a new era in how the country views its rivers," small dams "are coming down" across the U.S., reports the *Sacramento Bee*. The *U.S. Committee on Large Dams*, a non-profit professional group, has created

a new panel to meet demand for advice on dam removal. Within the last two years, dams have been demolished on the Clyde River in Vermont, on the Neuse River in North Carolina and on Butte Creek in northern California. In the Sierra Nevada, the U.S. Forest Service recently decided to let 10 low rock dams "crumble." And for the first time in history, the Federal Energy Regulatory Commission last fall ordered the destruction of a hydroelectric dam in Maine against the wishes of its owners.

Phillip Williams of the *International Rivers Network* said, "Just five years ago, you couldn't even get rid of small irrigation diversion dams." The small dams destroyed so far have "had few defenders" and were "the easiest to take down, politically." Whether any larger dams such as those on the Snake and Columbia rivers, will come down could signal whether the U.S. is "truly bent on freeing rivers" for wildlife habitat.

In late April, Sen. Patty Murray (D/WA) said that the Senate appears unlikely to approve the removal of four dams on the lower Snake River to improve salmon habitat. Meanwhile, Sen. Slade Gorton (R/WA) has reiterated his challenge to the Clinton Administration to drop consideration of removing Columbia and Snake river dams "in exchange for his reluctant agreement to demolish one on the Elwha River" to help restore salmon runs on Washington's Olympic Peninsula. Gorton, who chairs the Senate Appropriations Interior Subcommittee, introduced a bill "that he said would move the government a step closer" to removing the Elwha dam. The bill would also require a 12-year delay before a second dam, the Glines Canyon Dam, could be removed on the Elwha.

The Senator "said he already has secured \$11 million for the Elwha Dam and intends to allocate the remaining \$18.5 million needed to complete the acquisition." Gorton said, "I have made major concessions ... even though I find the policy a dubious one. If the Administration is serious about preserving

the effectiveness of the Columbia-Snake system, it will support this proposal." The Administration had "no immediate response, but environmentalists quickly denounced the offer. They blame the Snake and Columbia dams for pushing several Northwest salmon species to the brink of extinction ... [and] are optimistic that a federal judge eventually will rule that changes in the dams are necessary to avert violation of the Endangered Species Act." But "even a court order like that would be subject to congressional approval under Gorton's bill".

Meanwhile, a panel of 26 scientists cannot agree on whether barging juvenile salmon downriver is offsetting the harm of eight dams on the Snake and Columbia rivers. In a draft report, scientists from the National Marine Fisheries Service and



the *University of Washington* say barging has offset the harm of the eight dams on the rivers. But scientists from Northwest states and Native American tribes disagree. A final report "was supposed to be completed" by 11/97, but the "internal debates" delayed the release of even a draft until late March

In Vermont, just as enviros, the state and the state's largest utility decided to go to trial over the environmental impact of a series of hydroelectric projects on the Lamoille River, in early May Gov. Howard Dean (D) asked *Central Vermont Public Service Corp.* (CVPS) to try to reach a compromise out of court. The utility operates four dams on the northern Vermont river, "drastically" altering

stream habitat and blocking spawning grounds once used by endangered lake sturgeon and landlocked salmon. The state *Water Resources Board* on 11/96 canceled the dams' permits, saying the utility had failed to prove they would not endanger water quality. CVPS sued to overturn the decision, arguing that stream flow improvements advocated by the enviro group *Vermont Natural Resources Council* would be too costly. To avert a trial, the Chittenden, VT, Superior Court ordered the parties in the suit -- CVPS, the *Vermont Natural Resources Council* and the state Agency of Natural Resources -- to resolve their differences through mediation. But when they were unable to reach a consensus, the groups agreed to proceed with the lawsuit. A CVPS spokesperson said that "there's still a chance" for compromise, but Christopher Kilian of the *Vermont Natural Resources Council* said he remembered "sitting in a room with CVPS six years ago discussing these same issues" and that "it's time to see the case move forward".

In North Carolina, work began in 12/97 to remove the Quaker Neck Dam located in the Neuse River near Goldsboro. The voluntary watershed restoration project, carried out under a public-private partnership will improve fish habitat along a 75-mile stretch of the Neuse River and help replenish 925 miles of tributary spawning areas. Anadromous species expected to benefit by this project include striped bass, American shad, hickory shad, and shortnose sturgeon. The dam, 260 ft. across and 7 ft. high, was constructed in 1952 to provide cooling water to a *Carolina Power & Light Company* (CP&L) coal-fired electricity-generating plant. CP&L officials were willing to have the dam removed, but needed assurances that their water intake needs would not be jeopardized. In August 1993, studies performed by the U.S. Army Corps of Engineers (USACE) showed that construction of a 75-ft.-long, sheetpile weir dam in the plant's intake canal would provide adequate head for CP&L's pumps and eliminate the need for the Quaker Neck Dam. Shortly thereafter, the USACE completed a cost estimate and design specifications for the weir dam. Over the next

3 years, the project experienced considerable delay due to complex issues inherent with multiagency involvement. The U.S. Marine Corps, willing to demolish the dam as part of a military training exercise, was unable to participate due to procedural constraints. Finally, in October 1997 a contract was awarded to a private vendor for \$181,000 to construct the weir in the plant's canal and remove the Quaker Neck Dam from the river's main stem. The success of this project is a credit to the perseverance and dedication of all the agencies/groups involved, which withstood times of doubt and overcame countless obstacles.

Although new dams have become "the endangered species of public works projects," the *Contra Costa Water District* on 5/2 held a ceremony to officially unveil the \$450 million Los Vaqueros Reservoir, behind the first major dam to be built in northern California in 10 years. Given what state water director David Kennedy calls "institutionalized" environmental opposition to new dams, observers call it "remarkable" that a "big dam could be built at all in California these days".

Sources: Nancy Vogel, *Sacramento Bee*, 4/27/98; *AP/Portland Oregonian* online, 4/25/98; Scott Sonner, *AP/Seattle Daily Journal of Commerce/others*, 4/3/98; *AP/Portland Oregonian* online, 4/1/98; Paul Rogers, *San Jose Mercury News*, 4/24/98; *AP/Boston Globe* online, 5/4/98; EPS Watershed Events, USEPA (4501F), EPA 840-N-98-001, Spring 1998; and National Journal's *GREENWIRE*, *The Environmental News Daily*, 4/3, 4/29, and 5/5/98 5/12/98 4/20/98

Corps River Restoration Study

President Clinton's FY99 budget for the U.S. Army, Corps of Engineers includes \$25 million for a Riverine Ecosystem Restoration and Flood Hazard Mitigation initiative. The objectives of the program are to expand the use of nonstructural measures to reduce flood losses and to restore the natural resources and

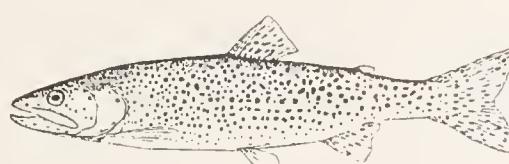
functions of rivers and their floodplains.

Floods have caused a greater loss of life and property and have devastated more families and communities in the United States than all other natural hazards combined. Despite expansive use of "flood control" structures, flood losses have been increasing over the last few decades and now average \$7.5 billion per year. Historically, structural measures such as dams, levees, and channelization projects have also caused significant adverse impacts to riverine ecosystems in watersheds across the country. The \$25 million (which still must be approved by the Congress) will fund studies of potential project sites, coordination with other agencies, and the development of solutions.

Source: EPA Watershed Events, USEPA, Office of Water (4501F), EPA 840-N-98-001, Spring 1998

Snake River Restoration

The U.S. Army, Corps of Engineers is trying to "undo some of the damage" wrought on the upper Snake River in Wyoming, where an extensive system of 40-year-old levees has "dramatically" altered the river's ecology and left long stretches of riverbank with no vegetation. In a "unique" demonstration project this fall, the Corps and Teton County, WY, officials will attempt to reintroduce natural elements into the rivershed and create new islands in the river. The islands were obliterated when levees on the Snake, which once flowed "steeply" through five or six shifting channels, confined flow to one or two high-velocity channels. The Corps plans to excavate those channels in an attempt to recreate the Snake's once slow-flowing, braided effect that gave the river its name.



"cutthroat trout"

Snake River cutthroat trout have suffered from the channelization, and "it is difficult to tell" what effects the levees have had on migratory wildlife. But "for all its ambition, the Corps' project is unlikely to reclaim all that has been lost on the Snake." Corps project manager Bill MacDonald said restoring the natural flow by taking down levees is "not feasible." MacDonald said, "Behind those levees is millions, if not billions, of dollars in real estate".

Source: Jim Robbins, *New York Times*, 5/12/98, and National Journal's *GREENWIRE*, *The Environmental News Daily*,

Truckee River Trout Restoration

Launching a "dramatic" but "low-tech" effort to restore endangered Lahontan cutthroat trout to the Truckee River Basin, Interior Secretary Bruce Babbitt on 4/18 joined environmentalists and leaders of the Pyramid Lake Paiute Tribe in placing trout-egg incubators made from old refrigerators in a Nevada stream.

The incubators are filled with some 90,000 trout eggs from a Paiute hatchery. But because hatchery-raised fish "rarely" leave the site where they have been stocked, the streamside incubators are part of an effort to make the trout "biologically imprinted" with the Truckee River. Mervin Wright of the Pyramid Lake Paiute Tribe, which depends on the trout as a food source, said the process will make the fish immediately accustomed to the river. They will return to the area to spawn and hopefully build the first wild population in the Truckee River in 60 years.

Veterinarian Fred Eales, who invented the refrigerator incubators, said the process imitates a natural system and has shown a 90% success rate on the 8.2 million trout and salmon eggs so far incubated in Wyoming and Idaho. While area farmers did not object to the use of the refrigerators, "they have made it known that they will oppose any efforts to reduce their water rights or remove dams on the Truckee River".

Source: (Lou Cannon, *Washington Post*, 4/19/98; Scott Sonner, *AP/Portland Oregonian* online/others, 4/19/98; National Journal's GREENWIRE, *The Environmental News Daily*, 4/10/98

Atchafalaya River Restoration

Louisiana state lawmakers and federal officials are developing a long-term plan to preserve the Atchafalaya Basin, "one of the last great river swamps." A state Senate panel on 4/7 approved a measure already passed by the state House to protect "some of the country's most productive fish and wildlife habitats." The bill would create an oversight board to work with the Army Corps of Engineers on swamp (wetland) protection. The Corps expects to spend nearly \$250 million over the next 15 years to buy 50,000 acres of swamp land (wetlands), secure easements on another 338,000 acres and set up water management projects in the basin. Congress has so far appropriated nearly \$50 million for the effort, and Louisiana plans to contribute \$90 million.

Sources: Carl Redman, *Baton Rouge Advocate*, 4/8/98, and National Journal's GREENWIRE, *The Environmental News Daily*. 4/10/98

Stream Corridor and Wetland Restoration Operating System

Scientists from EPA and the states of Oregon and Washington gathered last summer at a workshop in Corvallis, OR, with the objective of exploring ways to increase the effectiveness of stream corridor and wetland restoration projects. What emerged was consensus that the ecological effectiveness of restoration can be enhanced by having practitioners merge their ongoing activities under what can be termed a common operating system. Operating system simply means the linkage of restoration activities through the communication and mapped depiction of restoration activities occurring in particular geographical

areas, with stated rationale for the work.

Efforts are now under way to test the systems approach in the Willamette River Valley of Oregon. The Willamette Valley Performance Tracking System (PTS) is scheduled to produce a "design template" for the construction of Internet web pages. The template will embrace the basic concepts of ecosystem management, depict how the concepts are applied to restoration, and then show how they can be incorporated into existing and new web page development. It is hoped that use of the design template and associated web pages will exert, through communication, an organizing influence on current restoration practices.

The Willamette Valley PTS is also being viewed as a tool for the technology transfer and refinement of existing communication networks. The PTS team will take advantage of other successful efforts that rely on the Internet to organize and depict community-based environmental protection activities.

New innovations being considered for the PTS include (1) integrating the concepts of ecosystem management directly into the architecture of a web page, (2) depicting restoration practices as implemented at varying spatial scales, (3) displaying work load commitments and funding allocations, (4) providing examples of applied methods, and (5) documenting the scientific rationale for applied methods.

For more information, contact Richard Sumner with EPA in Corvallis, OR, at (541) 754-4444 or Cara Berman with EPA Region 10 (Seattle) at (206) 553-6246.

Source: EPA Watershed Events, USEPA, Office of Water (4501F), EPA 840-N-98-001, Spring 1998

TVA Shoreline Erosion and Stabilization

Shoreline soil erosion is a growing concern among lake users and resource managers in the Tennessee Valley. The Tennessee Valley Au-

thority (TVA) and its public and private partners are responding by demonstrating innovative stabilization approaches for reservoir shoreline erosion. "TVA's goal is to stabilize all critically eroding shoreline sites in TVA's lake systems through partnerships," said Ruben Hernandez, Vice President of Land Management.

TVA conducted a comprehensive field assessment of shoreline erosion during 1994-1997 to identify contributing factors. The assessment documented vegetation type, vegetative impacts, land use and erosion characteristics. "We're using such techniques as the environmentally friendly process of soil bioengineering or combining plants with engineering concepts to correct erosion problems," said Jack Muncy, TVA Project Leader.

Native plants, combined with structural designs such as rock riprap and coconut fiber rolls, are used. Some of the major components of this work are:

- Site-specific treatment that minimizes soil disturbance and installs BMPs;
- Reshaping of banks to ensure stability;
- Installation of riprap or other hard armoring techniques in combination with soil bioengineering applications; and
- Construction of exclusion fences to keep livestock from impacting riparian zones.

"In selecting plant materials for shoreline stabilization, we use native woody and herbaceous plants," Muncy added. TVA's "Banks and Buffers - A Guide to Selecting Native Plants for Streambanks and Shorelines" is used as a reference guide. For more information about TVA's shoreline stabilization work, contact Jack Muncy, TVA Land Management, Norris, TN 37828, (423) 632-1750.

Forbes Blasts Navigation

River of Subsidies, an article appearing in the 3/23 issue of *Forbes Magazine* details billions of dollars worth of subsidies given to barge companies and shippers through construction and maintenance of navigation projects on the Mississippi River and its tributar-

ies. Excerpts from that article follow:

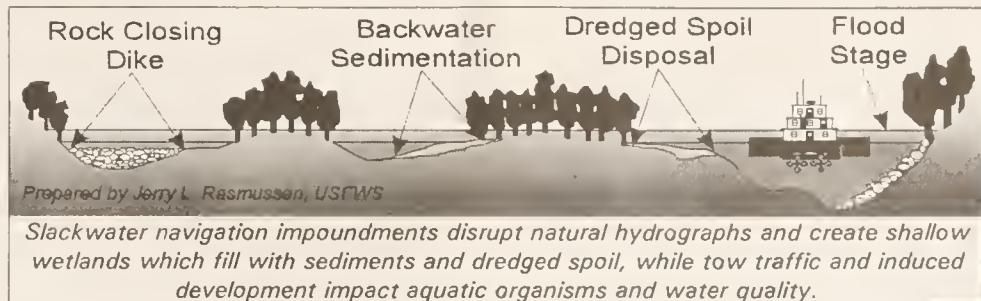
"Shippers and their customers in the coal- and farm-belt want bigger locks. Christopher Brescia, president of *Midwest Area River Coalition 2000*, a lobbying arm for waterway users, is betting seven lock replacements will be needed over the next 25 years. Estimated costs to build bigger locks range from \$250 million to \$1 billion each."

"...the U.S. Army Corps of Engineers has just spent the past six years on a \$49 million study forecasting to 2050 the traffic on the upper Mississippi and Illinois rivers."

"... Barges are the most subsidized form of transport in the U.S. Their fuel taxes cover around 10% of the annual \$674 million that the Corps spends building, operating and maintaining locks, dams and navigation channels. Taxpayers foot the rest. Compare that with railroads, which got a lot of land gifts a century ago but now cover all the costs of maintaining their rights of way. Even trucks repay, via fuel and user taxes, most -- arguably, all -- of the damage they do to the Interstates."

"In the late 1940s the federal government spent \$6 billion (that's \$54 billion in today's money) to make the Missouri River commercially navigable from Sioux City, Iowa to St. Louis, Mo. It justified the cost by estimating annual river traffic of 12 million tons. Last year the Missouri floated 1.5 million tons. In 1985 the Army engineers finished a 234-mile ditch to connect the Tennessee and Tombigbee rivers in Mississippi and Alabama. They forecast annual traffic of 27 million tons. Twelve years later the Tenn-Tom Waterway sees a third of that. Cost: \$1.8 billion, plus \$22 million a year for maintenance."

"Do we really need to widen those locks? Iowa State University economist C. Phillip Baumel says the river could get by with small, much cheaper fixes like extending lock guide walls or replacing the first-come, first-served system with a reservation system to relieve congestion."



"It's a fair question to ask: What in hell is the U.S. Army doing building locks for commercial traffic? For that we can thank the powerful farm lobby, which in the 1930s and 1950s screamed that without free locks and channels they would go out of business. Congress responded by putting the Army engineers into the lock business. Since then, farmers and their friends in the barge industry (notably including the politically ubiquitous *Archer Daniels Midland*) have fiercely protected their turf."

"It would be an interesting exercise to privatize the eight Illinois River locks by simply auctioning them off to the highest bidder, who could then charge whatever toll the traffic would bear. On this hard-nosed basis, the locks may be worthless. A study by a University of Illinois graduate student concluded that the purchase price based on this toll revenue would be less than what the Army spends annually to maintain the things."

Bruce Hannon, *Friends of the Mississippi Basin*, says, "A study to verify these private sector values should be done." Hannon continues, "The U.S. General Accounting Office should be commissioned to calculate these values and compare them to the past and planned Corps expenditures. Such a comparison should verify for the Congress just how much waste of federal revenues is flowing down the rivers of the heartland." Hannon quips, "If navigation were good for the local economy, then Cairo, Illinois would be Chicago." Hannon can be contacted at *Friends of the Mississippi Basin*, 1208 West Union Street, Champaign, IL 61821, (217) 352-3646, or by email at b-hannon@uiuc.edu.

The environmental impacts of navigation have been controversial on the Upper Mississippi ever since the locks and dams were constructed in the 1930's. Prior to their construction, even the top Corps of Engineers official in Washington, D.C. (Chief of Engineers) opposed the project, but he was over-ridden by Midwest agricultural interests, as well as by then-President Herbert Hoover, an Iowa native. The dams impounded vast acres of slackwater habitats that are now filling with fine sediments. Any maintenance, operation, or new construction of these navigation projects should include funding for operation and maintenance of the aquatic environments that the projects created. This would include removal of accumulating sediments in order to permit the survival of the river's native aquatic organisms.

Source: Bruce Upbin, *Forbes Magazine*, 3/23/98

Zebra Mussels Colonizing Mud and Sand

Researchers have found that zebra mussels have built colonies on the sandy and muddy bottom of Lake Erie, a habitat previously thought incapable of supporting them. Since their Great Lakes debut in the mid-1980s, researchers believed that these tiny freshwater bivalves could only colonize hard, underwater surfaces such as rocks, clams and runoff pipes. The new findings are reported in the first week of May's issue of the journal *Nature*.

"In terms of potential zebra mussel habitat, Lake Erie is wide open," said Paul Berkman, senior research associate at *Ohio State University's Byrd Polar Research Institute*. "More than

90% of the Lake Erie floor is a soft substrate. This is a wake-up call. We found that zebra mussels clearly colonize sand and muddy substrates in the lake," he said, adding that the densities of some zebra mussel colonies exceed 20,000 animals/m².

Berkman and his colleagues studied 200 km of the Lake Erie floor from the New York-Pennsylvania border to the lake's western basin. They determined that by 1995, zebra mussels covered about 2,000 km² of the lake bed's soft sediment. "We do know that mussels colonize soft substrates and that they are doing this over a significant portion of the lake," Berkman said.

A zebra mussel starts out as a microscopic larva and can attach itself to a single grain of sand or mud. When the animal becomes a juvenile, it starts secreting byssal threads, which serve as anchors to attach the mussel to a stable surface. It continues sending out these threads, picking up more sand grains and creating a mat of cemented sediment. "This creates a hard substrate,"

Berkman said. "By binding sand grains together with their byssal threads, the mussels create a conglomerate, subsequently settled by juveniles, which creates a bed of zebra mussels on the lake bottom."

Researchers used side scan sonar (SSS), a device that sends out frequencies that can differentiate between hard and soft underwater surfaces. "Since the side scan sonar signal is strongly reflected by hard substrate and weakly reflected by soft substrate, we could profile the lake bottom to determine where the zebra mussels were located," Berkman said.

The researchers then used an under-water video camera attached to a submersible remotely operated vehicle to take pictures of the suspect areas and discovered zebra mussels



"zebra mussel w/byssal threads exposed"

had colonized the soft sediment of the lake bed. "In studying patches of zebra mussels, we observed small mussels on the order of millimeters attached to individual sand grains," Berkman said. He says the potential implications for this discovery are great.

Other researchers include Melissa Hultuch and Emily Tichich, both of the *Byrd Polar Research Institute*; David Garton of the *Ohio Sea Grant Program*; Gregory Kennedy and John Gannon of the United States Geological Survey; and Scudder Mackey, Jonathan Fuller and Dale Liebenthal, all of the Ohio Department of Natural Resources. This study was funded by the *National Sea Grant College Program* under the National Oceanic and Atmospheric Administration and administrated through the *Ohio Sea Grant Program*.

Contact: Paul Berkman, (614) 292-3670; Berkman.1@osu.edu or Holly Wagner, (614)292-8310;

Chemical Control of Zebra Mussels

"Frustrated by a lack of progress in the war against zebra mussels," some researchers are contemplating using chemicals to block invasive species from entering the Great Lakes. Michigan Sea Grant Director Russell Moll said the private *Great Lakes Fisheries Trust* will give his research team \$300,000 to study the feasibility of destroying the larvae of zebra mussels and other non-native species in ships' ballast water with glutaraldehyde, a sterilizing agent used by the health-care industry. Moll "said there is little chance the U.S. and Canada would try to kill off existing zebra mussels by spreading the chemical throughout the lakes," but that its application to ships would be an additional measure to ward off future generations of the species.

The mussels, which have clogged Midwestern waterways, are believed to have spread to the Great Lakes through the ballast water of foreign ships. Federal law requires ships to exchange ballast water at sea, but some don't comply with the rule due

to "economic or safety reasons." Moll "said the effectiveness of the ballast water exchange is questionable, even if there is 100% cooperation".

Sources: *Toledo [OH] Blade /Journal of Commerce*, 4/1/98 and National Journal's GREENWIRE, *The Environmental News Daily*, 4/2/98

Extinctions, Disease Control, and Biodiversity

Nearly 70% of biologists in the U.S. believe a "mass extinction" of plants and animals is underway, but most Americans are unaware of the problem, according to a survey of 400 scientists released on 4/20. The *Louis Harris* poll, commissioned by the *American Museum of Natural History* in New York City, found that the scientists' concern for the disappearance of species surpassed their concern for pollution, climate change and depletion of the ozone layer. The poll "comes on the heels" of an *International Union for the Conservation of Nature* (IUCN) biodiversity study which found that at least one in eight known plant species is threatened with extinction.

Some 70% of the scientists polled also predicted that up to 20% of all living species could be extinct within 30 years, and nearly all attributed the loss to human activity, particularly habitat destruction. *University of Tennessee* ecologist Daniel Simberloff said, "The speed at which species are being lost is much faster than any we've seen in the past -- including those [extinctions] related to meteor collisions." However, the predicted disappearance of species "appears to have made relatively little impression" on the general public. Of the non-scientists polled, 60% had "little or no" understanding of biodiversity and only half ranked the loss of species a "major threat".

The 862-page IUCN report, titled "1997 IUCN Red List of Threatened Plants," was produced by the IUCN in conjunction with the *Smithsonian*, the *World Wildlife Fund*, the *Nature Conservancy*, the *Royal Botanic Gardens* in Kew and Edinburgh, and 10 other government and independent research and conservation groups in a half-dozen countries. Experts com-

pared the latest censuses against decades of field records and combined collections totaling 20 million specimens, one-fourth of them at the *National Museum of Natural History*. Those show a pace of species decline far above the historic extinction rate.

The results of the 20-year joint effort show that habitat destruction and introduction of nonnative species have caused approximately 34,000 species to become so rare that they could easily disappear. That amounts to 12.5% of the 270,000 fern, conifer and flowering species known worldwide. Of the imperiled species, 91% exist in no more than one country. Those statistics, the report emphasizes, "are just the tip of the iceberg" because so little is known about many areas, and "as more information becomes available, the situation will be shown to be even worse."

In the U.S., which probably has the planet's best-studied flora, about 29% of 16,000 species are at risk, according to the report. Similar percentages were recorded for Australia and South Africa. In general, the more detailed a country's species inventory, the higher its proportion of threatened plants. "This is the first comprehensive assessment of threatened species we've ever had," said W. John Kress, chairman of the department of botany at the *Smithsonian's National Museum of Natural History*. "It's a wake-up call to a major extinction event." In some cases, entire plant families are in trouble. For example, 75% of the yew family -- which produces the anti-cancer drug taxol -- is threatened with extinction globally. Even familiar groups are in trouble, including approximately 14% of roses, 32% of lilies and irises, and 29% of palms.

Widespread extinctions might affect medical science, according to the report. More than half of all prescription drugs are modeled on natural compounds, and one-fourth are taken directly from plants or are chemically modified versions of plant substances. "Plants have historically provided some of the most important drugs that we have," said

chemist David G.I. Kingston of *Virginia Tech*. That list includes such celebrated staples as morphine, aspirin and quinine, as well as a number of less common drugs such as anti-cancer medications derived from the periwinkle. "We've screened about 50,000 plant species so far, and gotten about 50 drugs," Kingston said, "so that's about one per thousand." The loss of 34,000 species, therefore, might doom development of 34 pharmaceuticals if the same ratio applies.

Fresh outbreaks of diseases worldwide are possible unless people find better ways to manage natural resources and the environment. The experts "said new menaces like the



AIDS and Ebola viruses and old scourges like malaria were the direct result of interfering with the environment -- destroying forests, wiping out animal species and polluting waters." David Molyneux of the *Liverpool School of Tropical Medicine* in the UK said the clearing of rainforests is causing diseases such as malaria and sleeping sickness to spread through new parts of Africa. Jaap Goudsmit, an AIDS expert at the *University of Amsterdam*, said scientists are worried because studies on monkeys have detected "many viruses ... that humans are susceptible to." And Goudsmit said that as primates are wiped out, the viruses will be forced to seek new hosts, perhaps humans. Goudsmit said, "It is a warning to us [that] we are too active in these areas".

Agriculture could be affected by loss of potential new food strains and ecosystem vigor. "There is an accumulating body of evidence indicating that as biological diversity is lost, there are changes in the way both natural and managed ecosystems function," said ecologist Christopher B. Field of the *Carnegie Institution of Washington*, "and they can often

have negative impacts on goods and services. When there are more plant species present, the recovery from disturbance is faster and total production is greater." Diversity provides a biological buffer "against things like climate change or migrations," said U.S. Fish and Wildlife Service biologist John J. Fay. "Every time we lose a species of plant we're losing a unique gene pool that has undetermined but possibly very significant benefits to mankind."

Two years ago, the IUCN placed nearly a quarter of all known mammal species and 11% of birds on the list. It also added a number of marine species for the first time. The Red List establishes five categories of organisms:

- species not seen in the wild in 50 years and presumed extinct;
- species suspected of having recently become extinct;
- endangered species, those likely to become extinct if the causes of endangerment continue;
- vulnerable species, those likely to become endangered if the causes of vulnerability continue, and
- rare species, those with small worldwide populations not yet endangered or vulnerable.

Of the total number of plants on the Red List, 43% are classified as rare, 24% as vulnerable and 20% as endangered. To be classified as threatened, a species must have reached the point at which there are fewer than 10,000 individuals worldwide, or fewer than 100 locations in which it is found. The study examined only vascular plants -- those with tissues that conduct water and nutrients -- and thus did not treat algae, lichens, fungi and the like.

In the wake of the IUCN report, conservationists are "struggling" with "how to set priorities over what to save." Deborah Jensen of the Virginia-based *Nature Conservancy* said that despite debate within the environmental community over how to preserve biodiversity, it is clear that trying to save endangered species one at a time is unworkable. "The idea is that you focus on the species most at risk and catch the rest later. But that leaves you always behind the curve", Jensen said. "To get ahead of the

curve," the *Nature Conservancy* and other groups are taking a "Noah's Ark" approach -- a strategy aimed at saving "a little bit of everything" -- by targeting representative habitats worldwide. "You have to take the rare species and habitat management approaches together", Jensen said.

A pair of papers by *University of Rhode Island* researchers published in the 4/98 issue of *Conservation Biology* focus on identifying and prioritizing which sites or "hot spots" have the most species and need the most protection. The papers indicate "the link between biological and landscape diversity" and "show that landscape diversity can be used to predict biodiversity across a variety of landscapes." Co-author Peter August says "a number of conservation groups have expressed big interest in the concept".

A *New York Times* editorial says "given the sheer scale" of the threats to biodiversity, "government involvement seems an absolute necessity, requiring the same commitment" that led to the international climate change treaty last year.

Sources: Joby Warrick, *Washington Post*, 4/21/98; Maggie Fox, *Reuters/Mexico City News/others*, 4/19/98; Peter Spotts, *Christian Science Monitor*, 4/15/98; Society for *Conservation Biology* release, 4/15/98; (New York Times, 4/12 and 4/14/98; William K. Stevens, New York Times 4/9/98; Curt Suplee *Washington Post* Staff Writer, 4/8/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 4/15, 4/21, 4/22/98

Ag Waste Update

State and local officials from across the nation testified before the Senate Agriculture, Nutrition and Forestry Committee in early April, asking for national standards on agricultural waste disposal. Maryland Gov. Parris Glendening (D) and Tulsa Mayor Susan Savage (D) said national standards are necessary to protect waterways that cross political boundaries, and to keep busin-

esses from relocating in areas where there is less environmental regulation. Glendening said farm practices in six states affect the Chesapeake Bay, in whose tributaries the toxic microbe *Pfiesteria piscicida* appeared last summer. Experts suspect ag waste runoff contributed to the outbreak. Glendening said, "As a single state, we can only have a limited impact on overall water quality. We must address the issue of water quality on a broader scale". Savage told the committee about the effects of animal wastes on his city's drinking water supply. High levels of phosphorus from poultry runoff last year were found in Lake Eucha, the city's main water source.

Sen. Tom Harkin (D-IA) has introduced a bill that would set tougher standards on agricultural runoff and give oversight to the Dept. of Agriculture (USDA), but Acting Agriculture Deputy Undersecretary Craig Cox told the Senate Agriculture Committee that the Administration believes the EPA should oversee farm waste regulation, not the USDA. In a statement to the committee, the *American Farm Bureau Federation* (AFBF) said it is unnecessary for the USDA to have jurisdiction over animal waste management and called for "flexible, voluntary and incentive-based conservation programs". Harry Knobbe of the *National Cattlemen's Beef Assn. (NCBA)* told the committee that Harkin's bill would undermine state autonomy and authority for water programs. Joshua Reichert, director of the environment program at *Pew Charitable Trusts*, writes in a syndicated op-ed that the public wants and expects the federal government to protect the environment from livestock runoff. He calls on Congress to get behind the Clinton Administration's new clean water initiative to address nonpoint source pollution. Reichert said, "Presumably ... most lawmakers now understand that the threat is real"

On 5/13, USEPA officials told the House Agriculture Committee that agriculture is the biggest polluter of U.S. waterways, fouling more than 173,000 miles of streams and rivers with chemicals, erosion and animal waste runoff. Agriculture has been blamed for 70% of water pollution,

which has harmed aquatic life and restricted human activity, according to Michael Cook, the EPA's director of wastewater management. However, according to the Maryland Dept. of Natural Resources, fertilizer runoff from lawns contributes an estimated 10% of nutrients that pollute the Chesapeake Bay, while farms contribute only 33% and factories and sewage treatment plants contribute another 33%. Kirk Hurto of *TruGreen-ChemLawn*, the largest lawn care company in the U.S., cites studies that indicate healthy lawns-- helped by ample fertilizer -- are one of the most effective barriers against runoff.

Meanwhile, the EPA in March proposed new pollution standards and waste-management regulations for the 6,600 largest cattle, hog and poultry operations under the Clean Water Act. Cook said, current federal laws "are not adequate to deal with the modern industry." But Rep. Larry Combest (R/TX), chair of the House Agriculture livestock subcommittee, said the proposal "runs counter" to a long-term federal effort to encourage farmers to voluntarily comply with environmental regulations and let states enforce their own rules.

States across the U.S. continue to struggle with how to deal with the 2,000,730,000,000 lbs. of agricultural waste that the Senate Agriculture Committee estimates is produced in the U.S. each year. A summary of issues/actions in various states follows:

Arkansas: Poultry farmers, equipment companies and processors in northwest Arkansas have joined to defend the poultry industry against allegations that it is the source of the region's water-quality problems. *The Poultry Partners of America* hopes to avert government regulation by showing that most farmers voluntarily practice good management.

California: Farmers and state officials are working to stem "rainy season" pollution runoff from southern California's dairy center. Farmers in Orange, Riverside and San Bernardino counties want to reduce the amount of nitrates that wash from their operations into the Santa Ana River watershed. But winter storms damaged the dikes and

holding ponds that they use to control runoff.

Colorado: The Senate Appropriations Committee on 4/13 effectively killed legislation that would have required farms with more than 5,000 hogs to apply for a state permit, develop a waste-management plan, monitor soil for groundwater contamination and undergo state inspections. Meanwhile, the Colorado House Agriculture Committee revived legislation that would impose restrictions on large-scale hog farms. Environmentalists welcomed the action but said they would like odor controls added to the bill. The state legislature, however, failed to take up any of these measures before the session ended in April. Supporters of regulation vowed to include on Colorado's 11/97 ballot an initiative requiring a permit system, water-quality monitoring, bonds to cover the cost of potential environmental damage, and measures to reduce odor from waste lagoons.

Illinois: The DeWitt County, IL, tax review board has ruled that proximity to hog farms lowers property values and justifies reducing taxes on nearby homes. Officials lowered assessments by 30% on homes within 1.5 miles of one facility and by 10% on homes within 2 miles.

Iowa: The Iowa legislature on 4/13 sent Gov. Terry Branstad (R) compromise legislation that would place new restrictions on hog farms, including imposing tougher penalties for farmers with a pattern of environmental violations and requiring greater distances between feedlots and residential properties. The bill, expected to be signed into law, would also raise permit fees for large feedlots and allot money to a \$3 million state fund to clean up lots that are abandoned or pose environmental risks.

Kansas: The Kansas House on 4/10 agreed to a compromise bill, expected to be signed into law, that would boost regulation of corporate hog farms. House and Senate negotia-

tors had agreed to legislation that would require county-wide votes whenever a county commission considered a corporate hog farming proposal, but they voted down an attempt to eliminate a loophole that allows the expansion of family farms. Critics say the loophole would still allow *Murphy Family Farms*, the largest hog company in the U.S., to operate in counties that have banned corporate hog farming. Reversing a position taken last year, the Great Bend, KS, City Council has voted against a plan by Kansas City-based *Seaboard Corp.* to build a slaughtering and processing plant in Great Bend. Four new members of the eight-person council were "swept into office" recently "in an anti-hog write-in campaign". Despite the Great Bend vote, *Seaboard* is proceeding with its search for a site on which to locate a \$100 million plant. Meanwhile, researchers from *Kansas State University* on 4/29 told the environment committees of the state House and Senate that their study of *Seaboard Corp.* waste lagoons indicated they did not pose a threat to groundwater. However, nitrate pollution in groundwater in Dodge City, KS, has been attributed to a defunct hog farm that closed there in 1984. Environmentalists are pushing for cleanup of the groundwater before the current feedlot owner is allowed to expand.

Kentucky: Kentucky imposes no restrictions on its 2,500 poultry farms, but Fulton County recently enacted the state's first local-control ordinance. The county now requires permits for new chicken houses and hearings to determine the project's impact on soil, air, water and property owners. Meanwhile, fearing regulations like those that have "stymied" corporate hog farms, the state's poultry trade association has

adopted voluntary construction guidelines for poultry houses.

Maryland: Gov. Parris Glendening (D) on 5/8 signed "landmark legislation" to curb runoff pollution in the Chesapeake Bay, "cap[ping] a nearly year long effort to adopt a strategy for battling" the toxic microbe *Pfiesteria piscicida*. The "sweeping" water quality initiative targets agricultural pollution and requires farmers to develop nutrient-management plans within seven years. A *Washington Post* editorial praises the legislation as well as a recent \$6 million penalty imposed on an Eastern Shore poultry plant owned by *Tyson Foods Inc.* "[I]n tightening runoff controls, studying *Pfiesteria*, exacting large fines and shifting financial responsibility to the big players, the federal and local governments are pressing with new effectiveness to maintain the health of the bay." A *Baltimore Sun* editorial said "If these *Tyson* programs show positive results, pressure will increase to require similar measures throughout the *Delmarva* chicken industry." The \$6 million water-pollution settlement against Springdale, AR-based *Tyson Foods Inc.* will "...speed up pollution controls, reducing potentially harmful runoff faster than a new Maryland law requires," reports the *Baltimore Sun*. The agreement, the largest water pollution settlement in Maryland history, involved charges that *Tyson's* Berlin, MD, plant discharged high levels of fecal coliform bacteria, phosphorus and nitrogen into the Kitts Branch, a tributary of Chincoteague Bay. Under the agreement, the USEPA will require the company's 240 mid-Atlantic contract farmers to adopt nutrient management plans. The settlement accelerates some controls and includes some not addressed by Maryland. The State requires that farms using animal waste as fertilizer implement nitrogen-control plans by 12/1 and phosphorus-control plans by 7/4, while the *Tyson* settlement requires such plans to be adopted within two years. Maryland requires that poultry producers treat manure with phytase, an enzyme that reduce manure's phosphorus content, by 12/00, while the *Tyson* plan calls for phytase use within six months of a



judge's approval of the settlement. While the Maryland bill does not address denitrification, the settlement requires *Tyson* to install equipment to reduce nitrates in waste by 15% at the Berlin plant and by 30% at two plants in Virginia and one in Pennsylvania. Federal and state regulators said the settlement could establish a precedent for enforcement actions against poultry producers. Carol Amend of the EPA said future settlements would probably be "consistent" with the *Tyson* case. Lois Schiffer of the Justice Dept. said, "This action shows that it's more expensive to not to comply with the law than to comply with it".

Despite a \$1 million effort and the special attention given to reducing agricultural runoff into the German Branch tributary of the Chesapeake Bay, the stream now contains more nitrogen and phosphorus than when the effort began in 1989, reports the *Baltimore Sun*. After a 1985 water-quality survey indicated the German Branch had "excessive levels" of the harmful nutrients, officials launching the Chesapeake Bay restoration effort a decade ago made the stream a "targeted watershed" where they hoped to reduce nutrient pollution by 40% and show what could ideally be done with intensive planning and monitoring. But according to a recent report by the Maryland Dept. of Natural Resources, efforts by farmers, scientists, and federal, state and local agricultural and environmental agencies to reduce fertilizer use and improve water quality have failed to meet expectations. The DNR analysis reported that "it is difficult to identify any positive water quality results obtained from [improved management practices] in the watershed." Levels of nitrogen and phosphorus have been increasing, largely due to unexpected changes in the agricultural industry since the restoration effort began. Increases in the number of crops grown, a shift toward raising wheat instead of corn and poultry instead of cows, and an increase in the use of sewage sludge as fertilizer have raised the amount of harmful runoff, "negat[ing]" improvements made by reducing fertilizer use.

Meanwhile, Pocomoke City, MD, physician Ritchie Shoemaker, who last year treated "several dozen" people with ailments allegedly related to exposure to the toxic microbe *Pfiesteria piscicida* in the Pocomoke River, in early May reported that he had treated a man who had developed similar symptoms last month while fishing in the Pocomoke. But biologists from the DNR said none of the 799 fish they tested in the area this Spring had the lesions characteristic of previous *Pfiesteria* outbreaks. Also on the positive side, "Baby oysters in amazing and mysterious abundance" have appeared in the eastern part of Chesapeake Bay, prompting hopes that they "could contribute to a potential turnaround for the struggling fishery and improve the overall health of the bay".

Minnesota: The Minnesota Pollution Control Agency (MPCA) determined that hydrogen-sulfide gas levels exceeded state limits near 5 of 10 hog, poultry and dairy feedlots tested over a two-week period. The findings, including one measurement that reportedly was 600 times the state standard, indicate that air-quality problems near feedlots "may be more serious and widespread" than previously thought. State officials said they hope to avoid imposing fines or other punitive actions by working with facilities to correct the problems. Meanwhile, the MPCA has approved a 2,000-hog feedlot that will be built between two Stearns County, MN, lakes. Area residents denounced the decision, saying the MPCA approved the facility even though it had not visited the site and the farmer violated state law by failing to notify residents of his application. Arguing the MPCA cannot keep up with the enforcement demands of the state's growing agricultural industry, Minnesota counties are increasingly depending on themselves to regulate large-scale feedlots.

A federal judge on 4/7 sentenced a former wastewater-treatment operator at a livestock-processing plant to six months in prison for conspiring to violate the federal Clean Water Act. U.S. District Court Judge James Rosenbaum found Gary Keck of *Darling International's* Blue Earth, MN, plant guilty of illegally discharging

pollutants into the Blue Earth River. *Darling International* paid a \$4 million fine for the violation.

North Carolina: A "long-awaited" report released in late April by the state Agriculture Dept. recommended that taxpayers underwrite the costs of replacing the open waste lagoons on North Carolina's hog farms. The report, ordered last year by the North Carolina General Assembly, was welcomed by the hog industry, but attorney Michelle Nowlin of the Chapel Hill-based *Southern Environmental Law Center* said the proposal "phased out ... any concern for the safety and health of citizens".

Ohio: Gov. George Voinovich (R) on 4/14 introduced a proposal that would impose greater state oversight over animal waste disposal, improve state enforcement powers to correct operating problems, and require farms to implement a plan to control rodents and pests before receiving a state permit. Meanwhile, the Ohio EPA on 4/15 approved plans by *Buckeye Egg Farms* to add 4.5 million chickens to its Licking County facility. On 5/7 a coalition of environmental groups again called on Gov. George Voinovich (R) to order a moratorium on corporate farms until the Ohio EPA or legislature acts to tighten farming regulations. Voinovich spokesperson Michael Dawson said the governor does not have the authority to issue a moratorium. Morral, OH, officials on 5/10 planned to introduce an amendment to a new ordinance banning the use of animal waste as fertilizer that would allow farmers to use waste generated by their own livestock.

Oklahoma: The Oklahoma Senate on 4/15 rejected a state House bill that would have banned future corporate hog and poultry farming. But on 5/11 they approved a poultry regulation bill that requires taxpayers to pay the state's \$300,000 cost of regulating the industry. The bill's author, state Sen. Paul Muegge (D), had originally proposed a measure that would have required large-scale poultry farmers to pay a fee to cover regulation, but the state House objected to the provision. Meanwhile, Gov. Frank Keating (R) recently signed sweeping, permanent regulations that will govern corporate poultry and hog operations. The pro-

visions prohibit the spreading of poultry manure whenever it rains and limit the total amount of phosphorus from poultry manure that can be applied. The hog rules bar construction of large operations without public hearings and building permits. State Rep. Terry Matlock (D) continues to push a bill that would negate the poultry rules signed by Keating. Keating said that hog and poultry companies should pay the cost for regulation, but he has not said whether the absence of such a fee will prompt him to veto the bill.

South Carolina: Clemson University researchers have reported that turkey farmers in north-central South Carolina have tainted fields with excessive poultry manure. All but one of 25 fields in the Fork Creek watershed showed high levels of phosphorus, according to their report.

Utah: Construction of two new 10,000-sow barns at the *Circle Four* hog farm -- the nation's largest -- is underway in Iron County, UT, and applications for groundwater discharge permits are "coming fast and furious," according to Utah environmental official Mark Novak. Meanwhile, state air quality officials are assessing the emissions from the corporate farm to determine if they might, when carried by rainfall, pose a threat to groundwater.

Sources: Curt Anderson, *AP/San Francisco Chronicle/Examiner online/others*, 4/2 and 5/14/98; P.J. Lassek, *Tulsa World*, 3/29/98; *CongressDaily/A.M.*, 4/3/98;; *AFB release*, 4/2/98; *NCBA release*, 4/2/98; John Lang, *Scripps Howard/Little Rock Arkansas Democrat-Gazette*, 5/10/98; Shari Venema, *Little Rock Arkansas Democrat-Gazette*, 5/10/98; *AP/Sacramento Bee*, 4/17/98; Mark Eddy, *Denver Post*, 4/14 and 4/23/98; and *Denver Post*, 5/6/98; *Chicago Tribune*, 5/7/98; *AP/Minneapolis Star Tribune*, 4/15/98; *St. Paul Pioneer Press*, 4/8/98; Steve Painter, *Wichita Eagle*, 4/11, 4/26, and 4/30/98; Painter/Hays, *Wichita Eagle*, 4/9/98; Jean Hays, *Wichita Eagle*, 4/28/98; *USA Today*, 5/12; James Malone,

Louisville Courier-Journal, 5/4/98; Michael Dresser, *Baltimore Sun*, 5/9 and 5/12/98; Heather Dewar, *Baltimore Sun*, 5/10 and 5/12/98; Chris Ison, *Minneapolis Star Tribune*, 4/26 and 4/27/98; *AP/Minneapolis Star Tribune*, 4/27/98; James Eli Shiffer, *Raleigh News & Observer*, 4/30/98; Vindu Goel, *Cleveland Plain Dealer*, 4/15/98; *AP/Cleveland Plain Dealer online*, 4/16/98; *AP/Cleveland Plain Dealer online*, 5/8 and 5/11/98; Mick Hinton, *Oklahoma City Daily Oklahoman*, 4/22/98; *Oklahoma City Daily Oklahoman*, 5/8/98; John Greiner, *Oklahoma City Daily Oklahoman*, 5/12/98; Sammy Fretwell, *Columbia [SC] State*, 4/22/98; Mike Carter, *AP/San Francisco Chronicle/Examiner online*, 4/20/98; *Gainesville [FL] Sun*, 4/17/98; Tom Horton, *Baltimore Sun*, 5/8/98; Peter Goodman, *Washington Post*, 5/20/98; and National Journal's *GREENWIRE*, *The Environmental News Daily*, 4/3, 4/9, 4/17, 4/24, 5/1, 5/8, 5/11, 5/12, 5/13, 5/12 and 5/20/98

Miscellaneous River Issues

California Farmlands Retired: "For the first time in California history," farmland in the San Joaquin Valley will begin to be permanently retired from production over the next few months because it has become too salty due to irrigation. The federal Bureau of Reclamation plans to retire 12,000 acres this year, "the first step in a plan to gradually set aside tens of thousands of acres for a wildlife refuge." An estimated 4 million acres of California farmland — almost half of the irrigated acreage — suffer from salt buildup. The water used in a single irrigation season on the west side of the San Joaquin Valley deposits 1.2 tons of salt and selenium/acre, according to the Sacramento-based *Water Education Foundation*. Many CA farmers blame the government for their "ruined lands and their tainted reputations as the villains behind the environmental disaster." A proposed drainage system that would have sent salt and agricultural wastes to the Pacific Ocean was never built "first because the state's farmers refused to pay for it and later because of environmental concerns about dumping untreated

farm wastewater into waterways." Though the government has spent millions of dollars to study salinity management, it will be "difficult, if not impossible," to resolve the competing interests of agriculture and the environment. Terry Young of the *Environmental Defense Fund* said, "The only really long-term solution is to create a market for the salt and the selenium". Sources: Karen Brandon, *Chicago Tribune*, 3/30/98; and National Journal's *GREENWIRE*, *The Environmental News Daily*, 3/31/98

Florida Mining/Wetland Funding:

Florida limestone miners have agreed to donate five cents towards wetland conservation for every ton of rock they mine, under a "landmark" deal heading for approval by the state legislature. The 50-year fee plan, negotiated between mining companies and state environmental regulators, will be adjusted annually for inflation and is expected to raise \$300 million by 2049. The funds will be used to buy "ecologically important" land in the Lake Belt, a "soggy" 89 mi² region adjacent to Everglades National Park. The area provides drinking water for Miami and could become "the largest link" in a proposed chain of wetlands to buffer the Everglades National Park from suburban development. Under the fee scheme, which could affect 15,000 acres proposed for mining, the companies will set aside up to 2.5 acres of the "choice wetlands" for every acre mined. Source: Cyril Zaneski, *Miami Herald*, 4/27/98; and National Journal's *GREENWIRE*, *The Environmental News Daily*, 4/28/98

Forest vs Farmland Streams:

"Streams draining forested areas in the Ozark Mountains are among the cleanest in the nation, but Ozark farmland streams contain more nutrients from animal waste than most other streams in the nation, according to a USGS study" released on 5/1. The study of waters in Arkansas, Missouri, Oklahoma and Kansas from 1992 to 1995 "is considered the most comprehensive scientific assessment yet of the water quality in the Ozarks Plateau area". The study found fewer darters and nearly three times fewer sunfish in agricultural streams than in forested streams. USGS hydrologist Jim Peterson said, "There's at least seven species of darters that are

found only in the Ozarks. If something does happen to eliminate those fish from the Ozarks, they're eliminated from the entire world". The study also found that concentrations of heavy metals such as lead and zinc in streams near old mining sites in Missouri are among the highest in the nation. High levels of lead and zinc were also found in the tissue of downstream fish. But Peterson said animal waste from cattle and poultry production "is probably the biggest concern" because it has "far-ranging effects" and is present in a large area of the Ozarks. The USGS will conduct a duplicate study of the Ozarks in 2001 to determine whether water quality is improving. Sources: Seth Blomeley, *Little Rock Arkansas Democrat-Gazette*, 5/2/98; Michael Mansur, *Knight-Ridder/Oklahoma City Daily Oklahoman*, 5/4/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 5/5/98

Kansas Oil Spills: Marking the "largest oil pollution penalty in the history of the US [EPA's] Region VII," Denver-based *Texaco Pipeline Inc.* and its subsidiary, *Texaco Trading and Transportation Inc.*, agreed to pay \$925,000 to settle federal lawsuits related to 17 oil leaks in Kansas since 1991. The spills involved discharges of more than 266,000 gallons of oil into state waterways. Source: *USA Today*, 4/22/98; Michael Mansur, *Kansas City Star*, 4/21/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 4/23/98

Louisiana Pollution: The federal government and Louisiana announced in early April details of a \$7 million agreement to settle allegations that *Borden Chemicals and Plastics* of Geismar, LA, contaminated soil and groundwater with hazardous waste. The \$3.6 million civil penalty included in the settlement, filed on 4/9 in U.S. District Court in Baton Rouge, is the largest penalty for a hazardous waste violation in Louisiana history and the second largest nationwide. Under the settlement, *Borden* will also spend several million dollars to clean up contamination around its plant and construct a groundwater containment and monitoring system



to protect an aquifer that supplies drinking water to the area. The federal government in 1994 sued *Borden* to make the company pay to clean up contaminated ground water. *Borden* agreed to the settlement after two days of trial on charges that it violated the federal Resource Conservation and Recovery Act, which governs the handling and disposal of hazardous wastes. Sources: Dept. of Justice release, 4/9/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 4/15/98

Maine Hydro-dam: Federal regulators on 4/14 rejected a proposal to build a new hydroelectric dam on the Penobscot River in Maine, saying it would have "significant adverse effects" on recovery efforts of the Atlantic salmon. *Bangor Hydro-Electric Co.* had asked the Federal Energy Regulatory Commission to license the Basin Mills Project, arguing that it is necessary to meet the region's electricity demand. But the commission ruled that the plant's "modest" electricity benefits did not outweigh the impact it would have on Atlantic salmon, which environmental groups say have nearly "disappeared" on the 240-mile river which already houses 12 dams. The Interior Dept., US EPA and National Marine Fisheries Service, as well as environmental groups and members of the Penobscot tribe "strongly opposed" the project. Sources: *AP/San Francisco Chronicle/Examiner* online, 4/15/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 4/16/98

Michigan Amphibians: Volunteers for

the state Dept. of Natural Resources (DNR) are trying to quantify Michigan's amphibian population to gauge water quality. The long-term findings could indicate where water quality might need to be improved, because amphibians are "like the canary in the mine," providing early indication of environmental degradation, according to Ray Rustom of the DNR. Sources: *AP/Las Vegas Sun*, 5/18/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 5/19/98

Minnesota Underground Tank Leaks: The Minnesota Pollution Control Agency has granted *Koch Refining Co.* a new five-year permit aimed at improving oversight of the facility's tanks and pipes and preventing environmental damage, following a "series of tank leaks that have caused extensive pollution" over the past 10 years. The Minnesota Legislature on 4/9 approved a bond measure to fund wildlife habitat, parks and other natural resource initiatives. Tim Sullivan, a spokesperson for Gov. Arne Carlson (R) said, "It clearly will be the biggest benefit for outdoors interests and conservationists ... in Minnesota history". Sources: Dennis Lien, *St. Paul Pioneer Press*, 4/10/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 4/14/98

Montana Mining: More than five years after receiving federal and state permits for a "massive" platinum and palladium mine near Nye, MT, *Stillwater Mining Co.* is now beginning work on the project. The company's existing mine has a "good environmental record," and the rock surrounding the ore does not create acid mine drainage or cause heavy metal pollution in waterways. Sources: *AP/Billings Gazette*, 5/12/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 5/14/98

Mercury in New York Fish: Wind-borne pollution from the Midwest appears to be the cause of elevated levels of mercury in some fish in a New York reservoir, according to federal geologists and New York environmental officials. A study of 47 fish from the Neversink Reservoir in Sullivan County, NY, conducted by the New York Dept. of Environmental Conservation, found that tissues from four out of six smallmouth bass and one

brown trout contained mercury at concentrations up to twice the federal limit. Geologist Peter Murdoch of the USGS said it is likely that mercury is being carried from Midwest power plants and factories to the reservoir by the same winds that cause acid rain in the Adirondack and Catskill mountains. Small amounts of the toxic heavy metal can accumulate in predatory fish as they feed on smaller fish that contain the element. Charles Sturcken of the New York City Dept. of Environmental Protection suggested that nearby reservoirs did not contain fish with elevated mercury levels because they collect runoff from lower land that is less likely to be threatened by windborne pollution. Although officials said the mercury does not pose a threat to people drinking water from the reservoir, the New York Dept. of Health plans to issue an advisory against eating more than one meal a month that includes fish from the reservoir. Sources: Andrew Revkin, *New York Times* [NY edition], 5/19/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 5/20/98

New Orleans Sewage: The city of New Orleans will spend more than \$200 million as part of a settlement with the federal government to address charges that its sewage system for years spilled raw sewage into waterways. Under the settlement filed on 4/7 in the U.S. District Court in New Orleans, the Justice Dept. and the USEPA said the city will work to improve water quality in the Lincoln Beach area. The agreement requires the city to renovate its sewage collection system to prevent future spills into the Mississippi River and Lake Pontchartrain. New Orleans will also pay \$1.5 million in civil penalties. The settlement closes a case brought in 1993 by the USEPA, alleging violations of the Clean Water Act and the Clean Air Act. New Orleans has long struggled with sewage overflow because the area, six feet below sea level, often receives large volumes of rainfall within a short period and because the sewage system has been in disrepair for more than five decades. Source: DOJ release, 4/8/98; and

National Journal's GREENWIRE, *The Environmental News Daily*, 4/9/98

New York Environmental Law Enforcement:

Enforcement: Under Gov. George Pataki (R), New York State employees "are spending far less time than they once did on crucial functions like enforcing environmental laws and managing resources like forests, wetlands and fisheries," according to a report by the state Assembly's environment committee. The report, written by Assembly Environmental Conservation Committee Chair Richard Brodsky (D), "gives ammunition to environmentalists" who allege the state Dept. of Environmental Conservation (DEC) has been soft on corporate polluters and "could help Democrats tarnish his image as an environmentalist" in this year's gubernatorial race. It found that in FY94, the first full fiscal year before Pataki took office, the DEC referred 1,544 cases of environmental law violations for enforcement action, while it referred only 722 cases in FY97. Total fines and penalties for pollution cleanup dropped from \$7.2 million in FY '94 to \$5 million in FY '97. Time sheets from nearly 4,000 DEC employees indicate that the hours spent investigating oil spills, monitoring wildlife populations and planning land acquisitions also dropped. DEC spokesperson Gary Sheffer said the figures reflect Pataki's effort to be "more fair to the regulated community" and his interest in helping companies comply with the laws rather than punishing them. Sheffer noted there was no indication that air, water and soil had become more contaminated, which he said would be evident if the DEC had failed to do its job. Regarding the time sheets, Sheffer said the report's methodology is flawed because the codes used for noting employees' activity are loosely defined. Sources: Richard Perez-Pena, *New York Times*, 5/18/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 5/18/98

North Carolina DOT Fined:

The North Carolina Division of Waste Management has levied a \$100,000 fine on the state Dept. of Transportation (DOT) for intentionally dumping hazardous chemicals near a DOT facility in Buncombe County last year. The fine is "thought to be the highest

ever against a state agency for a chemical spill". Sources: Stephanie Gibbs, *Charlotte Observer*, 5/7/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 5/12/98

St. Croix River Bridge: In a "significant victory for environmentalists," a federal judge on 4/13 upheld a National Park Service (NPS) decision that halted a proposed "freeway-style" bridge across the federally protected St. Croix River dividing Minnesota and Wisconsin. Federal District Judge Ann Montgomery in Minneapolis found proper the NPS's determination that the bridge would harm the qualities that earned the river protection under the Wild and Scenic Rivers Act of 1965. Bridge construction also threatened several species of mussels. The *Sierra Club North Star Chapter* and the *Voyageurs Region National Park Assn.* had filed the suit. Curt Johnson, chair of the Twin Cities-area regional planning agency that had endorsed the project, said the problem of how to move a growing number of commuters over the river won't go away. However, a *Minneapolis Star Tribune* editorial praised the ruling saying it "was an important victory for environmentalists and anyone concerned for sensible urban planning and growth". Meanwhile, Minnesota Gov. Arne Carlson (R) and Wisconsin Gov. Tommy Thompson (R) are lobbying Congress to override the NPS decision and authorize construction of the bridge. In a letter to a House-Senate conference committee working on the federal transportation bill, the governors asked conferees to exempt the project from the law's prohibitions. They said a judge's ruling upholding the NPS decision has "broad national implications". Thomas Cassidy of *American Rivers* said, "The St. Croix is about to be mugged behind closed doors without and public debate". Sources: (Mike Kaszuba, *Minneapolis Star Tribune*, 4/14/98; Karl Carlson, *St. Paul Pioneer Press*, 4/14/98; Philip Brasher, *AP/St. Paul Pioneer Press*, 5/18/98 and National Journal's GREENWIRE, *The Environmental News Daily*, 4/17 and 5/20/98

Virginia Composting Violation: The Virginia Dept. of Environmental Quality (DEQ) has issued six citations to *Ticonderoga Farms* in the last month

for violating environmental laws and allowing pollutants from a yard waste composting area to flow into a tributary of Elklick Run. Although Loudoun County and DEQ officials have criticized the facility in the past, these are the "most serious" citations levied against *Ticonderoga*. Charles Williamson of the DEQ said, "[The runoff has] pretty well wiped out the naturally occurring organisms that live in the stream." Neighbors of the nursery and composting operations "say they fear for their health and that of their animals." But state regulators "said they haven't seen evidence" of a health risk, even though the stream "often looks black as oil, emits a pungent odor and contains a bacterial growth with the consistency of cotton." Douglass Johnston of *Ticonderoga* said the substances leaching into the stream do not pose a serious environmental threat. DEQ officials say that water is running through the yard waste and carrying acids and other materials into the stream. Gregory Clayton of the DEQ said the agency is drafting a proposed agreement in which *Ticonderoga* would correct problems and possibly pay a fine. Sources: Justin Blum, *Washington Post*, 5/9/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 5/11/98

Virginia River Pollution: Nearly 2,200 miles of Virginia rivers are polluted with fecal bacteria, contaminated storm water or toxic chemicals, according to a state Dept. of Environmental Quality (DEQ) report released on 4/19 to the USEPA. State officials said the figures, an increase of about 700 miles since the last study in 1996, are a reflection of more accurate testing rather than an indication that the rivers are getting dirtier. The DEQ and the *Izaak Walton League* on 4/29 signed an agreement establishing the Virginia "Save Our Streams" program, an effort to augment the DEQ's monitoring of water quality in the state. Sources: Rex Springston, *Richmond Times-Dispatch*, 4/30/98; *Washington Post*, 4/30/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 4/30/98

Washington Irrigation Water Sales: Gov. Gary Locke (D) on 3/31 vetoed a "water-spreading" plan that would have allowed farmers to sell irrigation water saved through conservation measures or use it on new tracts of land. Farmers advocated the plan as a way to bring more land under cultivation without using more water, but Locke said the excess water should be available for "other important uses". Sources: David Ammons, *AP/Portland Oregonian* online, 4/1/98 and National Journal's GREENWIRE, *The Environmental News Daily*, 4/2/98

Wisconsin Pesticide Database: A coalition of environmental, agriculture and health groups is calling on Wisconsin state lawmakers to establish a statewide database of pesticide use. The Strategic Pesticide Information Project says such a database could help researchers understand better the possible links between the chemicals and environmental and health problems. Supporters say connections between pesticide use and disease have remained "tenuous" because data is lacking. Sources: *USA Today*, 4/28/98; Ron Seely, *Madison Wisconsin State Journal*, 4/28/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 4/30/98

Wisconsin Mining Laws: Companies that want to open mines in Wisconsin must prove they have operated a similar mine elsewhere in the U.S. for 10 years and been closed for 10 years without polluting, under a bill signed into law on 4/22 by Gov. Tommy Thompson (R). The legislation sets up "another hurdle" for *Nicolet Minerals Co.*, a subsidiary of Toronto-based *Rio Algom* that has sought to open a zinc and copper mine in northeast Wisconsin near the headwaters of the Wolf River. Fearful of the mine's "unproven technology" and potential to do damage to the river, a coalition of anglers, hunters, church groups, students, local legislators, Native American tribes and environmentalists pushed for the bill. Mary Kay Grasmick, a spokesperson for *Nicolet Minerals*, vowed that the company will "find a mine that fits the requirements". Sources: Robert Imrie, *AP/ St. Paul Pioneer Press*, 4/23/98; and National Jour-

nal's GREENWIRE, *The Environmental News Daily*, 4/24/98

Yellowstone Update: The Clinton Administration has presented Congress with an appraisal of the controversial *New World Mine* property in Montana in "an important step toward completing acquisition of the property to protect Yellowstone National Park from the potential impacts of mining". The assessment of the mine site, owned by *Crown Butte Mines Inc.*, "is essential" to completing a 1996 agreement between the firm and federal government, under which *Crown Butte* would receive \$65 million to abandon its mining plans. The appraisal, conducted for the Dept. of Agriculture by Spearfish, SD-based *Hall-Widdos & Co.*, put the value of the 1,625-acre mine site at \$69 million. The White House said the buyout from *Crown Butte* should occur this summer. Sources: Erin Billings, *Billings Gazette*, 4/30/98; White House release, 4/30/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 5/1/98

Climate Change

The years 1997, 1995 and 1990 were the warmest in the Northern Hemisphere since 1400, according to a study published in the journal *Nature*. The findings "provide the clearest and most dramatic evidence that the world is experiencing global warming caused by human activity. Climatologists Michael Mann and Raymond Bradley of the *University of Massachusetts* and Malcolm Hughes, director of the *University of Arizona, Tree Ring Research Lab*, used data from trees, ice cores and coral reefs at more than 100 sites around the world to reconstruct a 600-year climate record. Other scientists called the research "solid" and "valid" but said further research was needed to verify the findings.

Meanwhile, 35 scientists posted on a ship 350 miles north of Alaska are working to understand the Earth's climate system better by studying how the sky, snow, ice and water exchange heat in the Arctic region. According to the *Washington Post*, the scientists in the SHEBA program have found "surprisingly large

amounts of melt-water under the ice," which is "worrisome," because Arctic sea-ice is believed to be "especially sensitive" to atmospheric changes. The extent of Arctic sea ice has already been shrinking at a rate of 2-3% per decade over the last 20 years, and the amount of melt in 1997 "was fairly stupendous," says SHEBA Project Director Richard Moritz of the *University of Washington's Polar Science Center*. Over a 13-month period, the SHEBA project will gather data from a "representative cylindrical 'column' of Arctic environment" that extends from 15 mi. above the Earth to 500 ft. or more below the ice. Relatively little is known about the Arctic environment, but it is thought to be "a disproportionately important factor" in the Earth's climate.

"Bucking the prevailing wisdom, two of America's best-known weather experts have sharply criticized the theory that people are causing harmful global climate change." William Gray, a professor at *Colorado State University* who is "famous" for his hurricane predictions, on 4/10 told weather and emergency service officials at the National Hurricane Conference in Norfolk, VA, that "the changes in climate that the world is experiencing are natural." He said most of the global climate change can be explained by shifts in ocean currents and temperatures. Neil Frank, former director of the Miami-based *National Hurricane Center* and now a meteorologist with KHOU-TV in Houston, said that climate change "has nothing to do with carbon dioxide," the gas most often blamed for global warming. He said the "atmosphere is too complex, and the computers are too slow" to make long-term climate forecasts, and added that he has not seen any data that should "force" the U.S. into quick decisions on CO₂ emissions.

Meanwhile "The National Academy of Sciences (NAS) has taken the extraordinary step of disassociating itself from a statement and petition circulated by one of its former presidents that attack the scientific conclusions underlying" international efforts to reduce green-

house-gas emissions. The petition, which was purportedly signed by more than 15,000 scientists and released on 4/20, said that there is "no convincing scientific evidence" that global warming is occurring or will occur, and described the growing accumulation of greenhouse gases in the atmosphere as a benefit that would spur plant growth. The petition was accompanied by a letter from Frederick Seitz, a past president of the NAS and currently president emeritus of *Rockefeller University* in New York; Seitz's letter was attached to an article "described by its authors as a review of research literature of global warming." The article concluded that global warming is no threat.

"Many" scientists who believe global warming is a serious threat "expressed anger and alarm over the article because it was printed in a format and typeface similar to that of the academy's own journal." So the academy's governing council, "citing 'confusion' created by the petition and the unpublished article," on 4/20 issued a statement that the NAS had "nothing to do" with the effort and that the article "does not reflect the conclusion of expert reports of the academy." The petition that accompanied the article, and supposedly was signed by more than 15,000 scientists asserting their skepticism of global warming, included some "surprising" names. DC-based *Ozone Action* "scoured" the list and found "dozens" of names that are "unlikely to be scientists," including Perry Mason ("the fictitious lawyer?"), Michael J. Fox ("the actor?"), Robert C. Byrd ("the senator?"), Drs. "Frank Burns," "Honeycutt" and "Pierce" (the trio from the TV show *MASH?*), and even Geraldine Halliwell, better known as Ginger Spice, a member of the *Spice Girls* music group.

The article's lead author was Arthur Robinson, a physical chemist at the *Oregon Institute of Science and Medicine* in Cave Junction, OR. Robinson said the article had been circulated for peer review and for publication in a scientific journal, but he went ahead and released it because "copyright considerations" would have prevented it from being used in the petition drive. In an interview,

he said he "never intended to imply" that the NAS endorsed the article, and he described his institute as "devoted mostly to the study of biochemistry". Robinson "says the questionable names are the work of pranksters and shouldn't take away from the fact" that thousands of signatories are experts qualified to express an opinion on climate change. Robinson acknowledged he made little attempt to verify the credentials of those who responded to the petition by mail.

"The great war over global warming ... is more about values than it is about science," writes Robert Park, a physics professor at the *University of Maryland*, in a *New York Times* op-ed. There are "gaps aplenty" in the science supporting the global warming theory, he notes, and in such situations, "scientific judgment has a way of conforming to the religious and political views of the scientist. As for me," he adds, "my mother taught me to keep the thermostat down." Park speculates that the petition effort was underwritten by the petroleum industry.

Meanwhile, the *Royal Dutch Shell Group* on 4/21 "dealt a blow" to the *Global Climate Coalition (GCC)*, a DC-based group of oil companies, automakers, electric utilities and others opposed to the Kyoto global warming treaty, by announcing that it plans to quit the group at the end of the year. Mark Moody-Stuart, who will become *Shell's* new CEO on 7/1, said the company would not renew its membership in the GCC because *Shell* supports ratification of the treaty, which calls for cutting fossil fuel emissions thought to be linked to global warming. The "lobby group's opposition to the protocol was in conflict with *Shell's* commitment to help reduce carbon dioxide emissions", said Moody-Stuart.

Also, with support from a "dozen major companies", one of the nation's largest philanthropies will establish an organization "to study global warming and promote public understanding of the issue." The Philadelphia-based *Pew Charitable Trusts* said it has approved a \$5.2 million grant for the creation of a Washington-based *Pew Center on Global Climate Change* to be headed by former Clinton Adminis-

tration official Eileen Claussen. The center will not lobby for legislation but will underwrite economics research and advertising campaigns to raise public awareness of the issue. "Claussen said she hoped the center would bridge the gap between environmentalists and business interests ... by providing credible and persuasive evidence that solving the problem would also prove economically beneficial."

"What makes the effort unusual is that some of the world's biggest companies ... have endorsed the idea and agreed to let the center use their corporate logos in literature supporting it". The companies include *Boeing, Lockheed-Martin, Toyota, Maytag, Whirlpool, United Technologies, 3M, British Petroleum, Sun Oil, American Electric Power, US Generating and Enron*. "The companies are not contributing financially to the new center, but they are promising ... to reduce their own [greenhouse gas] emissions ...and to invest in new, more efficient products and technologies."

Sources: *(Investor's Business Daily*, 4/23/98; David Chandler, *Boston Globe*; 4/23/98; Jim Erickson, *Tucson Arizona Daily Star*, 4/23/98; Curt Suplee, *Washington Post*, 5/11/98; Peter Bacque, *Richmond Times-Dispatch*, 4/11/98; William Stevens, *New York Times*, 4/21/98, *AP/Las Vegas Sun*, 5/1/98; Robert Park, *New York Times*, 5/2/98; Martha Hamilton, *Washington Post*, 4/22/98; *Dow Jones Newswires*, 4/21/98; Traci Watson, *USA Today* 5/7/98, Chris Mondics, *Philadelphia Inquirer*, 5/7/98 and National Journal's *GREENWIRE, The Environmental News Daily*, 4/14, 4/22, 4/23, 5/4, 5/8, 5/11/98

Fish Consumption Warnings

Although state performances in monitoring waterways "vary widely," states are issuing "far more frequent" advisories about consumption of contaminated fish, according to a report released in early April by the *Natural Resources Defense Council* (NRDC). The advisories recommended limiting or avoid-

ing eating certain fish species that may have been contaminated by mercury, PCBs or toxins in the waterways. States in 1996 issued 2,194 warnings -- an 80% increase from 1993. The 1996 warnings accounted for 15% of all lakes, 5% of river and stream miles and all of the Great Lakes.

The NRDC attributed the increase to improved monitoring, but report author Amy Kyle said states vary in the extent of monitoring and how they warn the public. The NRDC has called on the federal government to develop a national monitoring standard and ensure that all states advise consumers of potential contamination. Although the USEPA has said it wants to conduct a national survey of fish contamination levels, develop a strategy for removing pollutants from waterways, and require states to improve monitoring practices, the FY99 budget approved by the Senate provides no funding for the program. More information on the NRDC report is available at <http://www.nrdc.org/nrdcpro/catch/ccsum.html>.

Source: National Journal's *GREENWIRE, The Environmental News Daily*, 4/9/98

Eco-Friendly Hemp

For the first time in 60 years, Canadian farmers this Spring planted legal hemp crops. Possible wood-fiber shortages and tighter environmental rules favoring natural fibers have increased farmers' interest in the crop, which requires no pesticides and little fertilizer to grow. Industrial hemp cultivation is prohibited in the U.S., as drug officials point out that the crop and illegal marijuana come from different varieties of the same plant. Canada has vowed to ensure its farmers seed only an industrial variety of hemp, which is prized for its versatility of use "in everything from paper to auto parts." Canadian hemp growers will be licensed by the federal government and monitored by police "to prevent abuses." Hemp plants must have no more than 0.3% of the psychoactive element THC.

Meanwhile in the U.S., a first of its kind lawsuit has been filed by a coali-

tion of farm and trade groups to challenge the federal policy that bans the cultivation of hemp. The basis of the suit in U.S. District Court in Lexington, KY, is economic, as "thousands" of farmers throughout the South and Midwest hope to include the crop in their annual rotations. Imported hemp products have been "abundant" in the U.S. for years. The plaintiffs, including the *Kentucky Hemp Growers Council*, argue that Congress in 1937 determined that hemp is chemically different from marijuana and that the ban on hemp production by the U.S. Drug Enforcement Administration therefore violates the constitutional doctrine of separation of powers of government.

Hemp may also make a desirable alternate crop for floodplain farmers.

Sources: John Urquhart, *Wall Street Journal*, 4/24/98; Michael Janofsky, *New York Times*, 5/14/98; and National Journal's *GREENWIRE, The Environmental News Daily*, 4/24 and 5/15/98

FWS Approves Cormorant Control

The U.S. Fish and Wildlife Service (FWS) recently announced a depredation order, allowing catfish farmers and other commercial aquaculturists to kill double-crested cormorants. "The order will be one component of an integrated program to reduce cormorant depredation losses at aquaculture facilities," the FWS said. By allowing farmers to kill double-crested cormorants, the depredation order will save an estimated \$20 million in fish taken each year in a national aquaculture industry worth \$714 million, the FWS said.

Cormorants consumed an estimated 18-20 million catfish in the Mississippi Delta during the winters of 1989-90, according to the FWS. That, the FWS said, was the equivalent to about 2 million pounds. Based on the cost of replacing these fish, annual losses to the catfish industry were estimated at \$1.8-\$2 million. Since then, the numbers have continued to rise, said Phil Mastrangelo of the U.S. Department of Agriculture's Wildlife Service based at *Mississippi State University* in

Starkville. He said a February survey showed 67,000 cormorants in the Mississippi Delta. Those numbers are about two-thirds higher than they were five years ago, he said.

Cormorants are long-necked, large-bodied diving birds and often can be seen standing on rocks with their wings spread. Their webbed



"Double-crested Cormorant"

feet and hooked beaks are adapted for chasing and capturing fish under water.

The order is not intended to control the cormorant population, the FWS said. It is directed at site-specific problems in which cormorants are eating channel catfish and other commercially important fish species, such as hybrid striped bass, Chinese grass carp and baitfish. FWS director Jamie Rappaport Clark said, "With this depredation order, the Service is letting aquaculturalists take action to protect their livelihood when nonlethal methods are ineffective."

The FWS order applies to the States of Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Minnesota, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee and Texas. The order states that cormorants can be killed by shooting (nontoxic shot) only during daylight hours; shot only in conjunction with an established nonlethal harassment program; decoys, taped calls or other devices may be used; a log must be kept recording the date and number of birds killed each month and the log must be maintained for three years; aquaculturalists must possess the appropriate state permits (where required).

Source: Larry Rea, *Scripps Howard News Service*, 4/4/98

Environmental Concern Spans Generations

"Teenagers and baby boomers agree that government and industry are falling short of their environmental obligations and that time is running out to protect the Earth from permanent environmental damage," according to a nationwide poll released on 4/21 by DC-based *Earthview*. The poll, commissioned by the *National 4-H Council* and *Honda*, also found that both generations say they would pay to guarantee clean air and water, and that technology will help solve environmental problems. The telephone survey of 1,000 teens aged 13-18 and 1,000 baby-boomers aged 40-55 "was designed to compare environmental attitudes among today's youths with those who were teenagers or young adults at the time of the first Earth Day in 1970."

Historian Neil Howe, an expert on generational studies, said the study shows that "teens are as committed to the environment as boomers ever were, though their choice of issues has shifted a bit to more emphasis on global warming and biodiversity, less on smog and overpopulation. This research rejects the old stereotype of apolitical kids who think the environment was just a personal, voluntary thing. In the late 1990s, we're seeing new teens with a whole new attitude."

The study, conducted by *Fleishman-Hillard Research* between March 11-19, has a margin of error of +/-3%. Some of the poll's findings follow:

- Boomers and teens agree time is running out to save the environment from permanent damage:
Teens: 77%, Boomers: 67%
- The greatest barriers to improving the environment in the U.S.:
 - "Lack of individual concern":
Teens: 45%, Boomers: 32%
 - Corporations:
Teens: 20%, Boomers: 32%
 - Government leaders:
Teens: 19%, Boomers: 22%
- Agree that corporations are not concerned about the environmental

impact of their practices or products:

- Teens: 71%, Boomers: 67%
- Agree that government leaders are not concerned about the future impact of today's environmental problems:
Teens: 63%, Boomers: 64%
- Willing to pay more for environmentally friendly products:
 - 50 cents more per gallon for less-polluting gasoline:
Teens: 70%, Boomers: 51%
 - More for less-polluting cars:
Teens: 80%, Boomers: 69%
- Agree government leaders should do more to control pollution from the oil and chemical industries, even if oil and gas prices go up:
Teens: 82%, Boomers: 76%

Sources: *Earthview* release, 4/21/98 and National Journal's *GREENWIRE*, *The Environmental News Daily*, 4/21/98

Religion and Forest Conservation

Catholics, Jews, Protestants and members of other faiths in early May formed a "broad-based religious coalition" aimed at promoting forest conservation. The Santa Rosa, CA-based *Religious Campaign for Forest Conservation* noted that although other environmental groups have organized to promote general "Earth stewardship," until now "the forest conservation movement has not been closely linked to religion." Owen Owens, director of the ecology ministry of the Valley Forge, PA-based American Baptist Church and responsible for the campaign's declaration on forests said, "In the heavenly city of the Lord, trees not only provide food, but their leaves heal the nations."

Representatives of the group will meet in 7/98 to draft a national statement to identify the "spiritual values of ancient forests" and to promote public policies that protect forests on public lands. An editorial said, "It's one thing to base debates about logging policies on dollars and cents. But if this campaign succeeds in bringing biblical values to the debate, it will be intriguing to watch the profit-and-loss mentality try to counter concerns about God's regard for 'the prayer of the juniper'".

Source: *Philadelphia Inquirer*, 5/16/98; *Baltimore Sun* 5/17/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 5/18/98

Forest Paints, Herbicides, and Miscarriages

Female foresters who used tree marking paint or herbicides for the U.S. Forest Service (USFS) from 1986 to 1996 were at higher risk for miscarriages and having children with birth defects than other women employed by the agency, according to a report by the *National Institute for Occupational Safety and Health* (NIOSH) obtained by the AP on 5/13. Although the study, based on a 1996 survey of 6,000 USFS employees, "stopped short" of concluding that exposure to paints and chemicals caused the miscarriages and birth defects, it found that the use of *Southern Coatings Boundary Paint* was associated with a 177% increased risk of miscarriage. *Nelson Paint* herbicides and paint were linked to 82% and 81% increased risks, respectively. Compared with non-foresters, foresters also had a 17% higher risk of having a child with a birth defect.

Epidemiologist Richard Driscoll, who led the NIOSH study, said that although "strenuous" forestry work is a risk factor for miscarriages, "even after controlling for other potential things, the relationship held up for the paints." USFS spokesperson Chris Wood said the agency expects "to go well beyond" the report's recommendations to protect workers' health. The USFS no longer buys *Nelson Paint*, and *Southern Coatings Paint* is no longer made. Kingsford, MI-based *Nelson Paint Company* did not comment because it had not yet reviewed the report.

Sources: Scott Sonner, AP/Portland Oregonian online/others, 5/14/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 5/15/98

Pollution Investigation Website

The *Environmental Defense Fund* (EDF) on 4/15 launched a free World Wide Web service that will allow users anywhere in the U.S. to investigate pollution sources in their communities and send questions "straight to the sources themselves". The *EDF Chemical Scorecard* combines scientific, technical and legal information from more than 150 electronic databases. Users can get toxics reports using zip codes or the names of states, counties or individual industrial facilities. Its health-based ranking system allows pollution releases to be weighted and displayed by the severity of the hazards they pose. The service includes street maps, so users can see where sources are located, and "take action" options to send free faxes directly to some polluting facilities and e-mail to the USEPA. The site can be found at www.scorecard.org.

Sources: *EDF release*, 4/15/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 4/15/98

DOI Recreation Website

A new way for visitors and travelers to learn about the many recreational opportunities available to them on America's public lands is being provided through www.recreation.gov -- a one stop shopping Website for information about recreation activities on federal lands. The "recreation.gov" initiative is part of Vice President Gore's multi-agency effort to improve customer service. Gore announced the availability of the new



website on 4/21 at a federal management conference in Washington, D.C.

The website was created by a small team of federal land management agencies including the Interior Department's National Park Service, Fish and Wildlife Service, Bureau of Land Management, and Bureau of Reclamation; the U.S. Department of Agriculture's U.S. Forest Service; and the Department of Defense's U.S. Army Corps of Engineers. Interior Secretary Bruce Babbitt noted that, "We'll keep improving America's recreational areas, and we'll continue to build on new ways for the public to get the information needed to have an enjoyable experience as they visit our public lands and historic sites."

The system was developed through a partnership approach that included the Interior Department's U.S. Geological Survey's *National Digital Atlas* mapping program, and the Department of Commerce's National Weather Service, which provided weather information. The system is housed on an HP NetServer donated by *Hewlett-Packard Co.* to the *National Park Foundation*. The gift from Hewlett-Packard is an excellent example of partnership and commitment to support innovative projects that use technology to benefit the public.

Each land management agency is responsible for maintaining and updating its own information on the database. Future stages of recreation.gov will include links to agency campground reservation systems, and may include links to other partners, such as state parks and tourism offices and local chambers of commerce. Visitors and users of America's public lands will also find the recreation.gov website very useful in their search for recreation sites by state, by agency or by recreational activity. The system will provide users with a list of all federal recreation sites meeting the search criteria, as well as a list of the activities available at each site. The system will also provide access to more detailed information about individual recreation sites by linking to agency web pages.

Source: U.S. Dept. of the Interior News Release, 4/21/98

Meetings of Interest

June 23-28: First International Ictalurid Symposium - Catfish 2000 Davenport, IA. Contact Steve Eder, Missouri Dept. of Conservation, P.O. Box 180, Jefferson City, MO 65109-0180, (573) 751-4115, FAX(573) 526-4047, <http://www.fw.umn.edu/ncdafs/cf2000>.

July 7-9: Monitoring: Critical Foundations to Protect Our Waters, Sciences - Politics - Management, Reno, NV. Contact: Joanne Kurklin, Water Quality Specialist, USGS, 202 Northwest 66th, Building 7, Oklahoma City, OK 73116, (405) 843-7570

July 9-12: 4th Annual Mississippi River Basin Alliance Conference, University of St. Louis, MO. Con

tact: Mississippi River Basin Alliance (612) 870-3441

August 23-27: 128th Annual Meeting of the American Fisheries Society, "Challenges for the New Millennium: Shaping the Future of Fisheries Science and the Fisheries Profession, Harford Civic Center, Hartford, CT. Contact: Paul Brouha, (302) 897-8617, Ext. 209.

September ?: 88th Annual Meeting a the International Association of Fish and Wildlife Agencies, Savannah, GA. Contact: Georgia Department of Natural Resources.

September 27-30: Peaks to Prairies: A Conference on Watershed Stewardship, Rapid City, SD. Contact the Throne Ecological Institute, 5398 Manhattan Circle, Boulder, CO

80303, (303) 499-3647, dir@thorneecoinst.org.

September 21-24: 6th National Nonpoint Source Monitoring Workshop, Cedar Rapids, IA. Contact Lynett Seigley or Carol Thompson, Iowa Dept. Of Natural Resources, Geological Survey Bureau, 109 Trowbridge Hall, Iowa City, IA 52242-1319, (319) 335-1575, FAX (319) 335-2754, lseigley@igsb.uiowa.edu or cthompson@igsb.uiowa.edu.

WETLANDS '98 - Integrating Wetlands and Floodplain Ecosystems Into Watershed Management, St. Louis, MO. Coordinated by the Association of State Wetland Managers and the Institute for Wetland Science and Public Policy. Contact: Jon Kuslar, ASWM, P.O. Box 269, Berne, NY 12023-9746, (518) 872-1804

Congressional Action Pertinent to the Mississippi River Basin

Endangered Species

- The Senate voted in early April to sell public lands in the West to fund endangered species programs.
- An effort by Sen. Harry Reid (D/NV) to block the auction of Bureau of Land Management (BLM) property to pay for tax breaks for landowners who cannot develop their property because rare plants or animals reside there was defeated. Instead, senators backed a measure by Sen. Dirk Kempthorne, R/ID, that allows use of proceeds from BLM land sales for these tax breaks -- if another source cannot be found. These tax breaks are a key part of the overhaul of the Endangered Species Act.
- Senate action on S. 1180, a bill to reform the Endangered Species Act, is still on hold. The bill, which used to have strong bipartisan support but has since lost some Democratic backing, has been awaiting Senate floor action as legislators try to work out concerns. Senators Kempthorne, Reid, John Chafee, (R/RI), and Max Baucus, (D/MT), have worked almost two years to

rewrite the endangered species law, the first bipartisan compromise on this controversial issue and the first to win White House support. But the battle over money has threatened to rip apart the hard-won compromise even before the endangered species bill gets to the full Senate for a vote.

- The House, which is waiting on the Senate before moving on ESA reform, held an oversight hearing on reform matters in the Resources Committee on March 5.
- A status report from congressional staffers says that the law "probably will remain" funded on a year-to-year basis, as it has since 1992. Industry and conservation groups say they believe the opportunity to revamp the law "has passed, probably for several years." And as fall elections approach, "congressional leaders will grow less interested in holding a vote on a measure that could lead to some members being labeled anti-environment by opponents".

National Forests

The House on March 27 voted 181-201 to defeat House Agriculture

Chairman Bob Smith's (R/OR) Forest Recovery and Protection Act (H.R.2515, H.Rpt. 105-440). The bill would have created a five-year program of identifying and treating portions of national forests damaged by disease or insect infestations and under the threat of wildfires. A scientific panel would have identified these "recovery projects" for the Forest Service to treat through logging or restorative means. The legislation had passed the House Agriculture Committee on March 4.

House Forests Subcommittee Chairwoman Helen Chenoweth's (A/ID) H.R. 2458, the Community Protection and Hazardous Fuels Reduction Act of 1997, passed her subcommittee on March 5 by a voice vote. The bill would direct the Interior and Agriculture secretaries to require the removal of overgrown areas of forests in danger of igniting forest fires near communities when entering timber contracts. And it would give logging companies a credit toward timber sales when they undertook overgrowth reduction projects.

Sen. Larry Craig's (R/ID) bill, S. 1253, to restructure federal forest manage-

ment policies while emphasizing a multi-use outlook underwent another hearing Feb. 3 with Wilderness Society President William Meadows. Craig went through the bill section by section, questioning environmentalists' opposition to the legislation.

Rep. John Peterson (R/PA) offered H.R. 3297 to suspend the Forest Service's roads proposal until public hearings are held at each forest unit and a report is issued on the impacts of the proposal on factors such as forest health.

Parks and Refuges

The Senate Parks Subcommittee began a series of hearings, April 1, on Subcommittee Chairman Craig Thomas' (R-Wyo.) S.1693, called the Vision 2020 National Parks Restoration Act, intended to change management and funding requirements for the national park system. The four scheduled hearings in April and May concentrated on several sections of the bill at a time.

The Senate Parks Subcommittee on Feb. 12 held a hearing on several bills that would add congressional and state oversight on some national monument designations and United Nations land protection program nominations, including two

bills that passed the House. H.R. 1127, S.477 and S.62 deal with amending the Antiquities Act that now allows the president to designate national monuments without Congress' approval. H.R. 901 would change the procedure of enrolling land under the U.N. World Heritage Site and Biosphere Reserve programs. S.691 deals with national monuments and U.N. programs. A markup has not been scheduled.

Sen. Ben Nighthorse Campbell (R/CO) introduced S. 1614 to mandate a permit for commercial filming in national parks and wildlife refuges.

Property Rights

The House on March 12 passed another controversial property rights bill, H.R.992. The bill would allow property owners to bring their "taking" claims to either a federal district court or a U.S. claims court, thereby eliminating jurisdictional uncertainties about which court has authority to oversee takings claims. The Senate which has held a committee markup of H.R. 1534, which incorporates the House-passed H.R. 1534 as well as H.R. 992 is holding off on a floor vote to seek consensus among senators.

Public Lands

Sens. Craig Thomas (R/WY) and

Spencer Abraham (R/MI) offered S. 1693 to make management and funding changes in the national parks system.

Rep. Bob Smith (R/OR) sponsored H.R. 3187 to amend the Federal Land Policy and Management Act of 1976 to exempt non-profit agencies holding right-of-ways on public lands from certain strict liability requirement connected to the rights-of-way.

Senators Max Baucus (D/MT) and Conrad Burns (R/MT) presented S.1913 to order Interior to sell leaseholds at the Canyon Ferry Reservoir in Montana and set up a trust fund for fish and wildlife conservation, hunting and fishing.

Water Rights

Rep. Bob Smith (R/OR) introduced H.R.3557, on March 25 that would require the federal government to pay fees and costs in proceedings related to state water rights adjudications. The bill was referred to the Judiciary Committee, but no hearings have been scheduled.

Sources: *Land Letter, STATUS REPORT*, Vol. 17, No. 6 (2/28/98), No. 7 (4/2/98), and No. 9 (5/4/98); Fredreka Schouten, *Gannett News Service*, 4/3/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 5/18/98



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River Crossings

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Number 4

Ten Heritage Rivers Picked

The advisory committee for the *American Heritage Rivers Initiative* (AHR) on 6/16 recommended 10 rivers to President Clinton to receive concentrated federal assistance. These include the:

- Connecticut River in Connecticut, Vermont, New Hampshire and Massachusetts;
- Detroit River in Michigan;
- Hanalei River in Hawaii;
- Hudson River in New York;
- New River in North Carolina, Virginia and West Virginia;
- Rio Grande River in Texas;
- Potomac River in Maryland, Pennsylvania, Virginia and West Virginia;
- St. Johns River in Florida;
- Upper Mississippi River in Iowa, Illinois, Minnesota and Wisconsin; and
- Willamette River in Oregon.

The selected rivers came from a pool of 126 nominations and are meant to represent a cross-section of the nation with unique natural, cultural, historical, economic, scenic and recreational aspects, according to the Council on Environmental Quality (CEQ) -- the agency heading the program. About a dozen other agencies, including the departments of Agriculture, Interior, and Housing and Urban Development are participating in coordinating river-related services, from grants to staff assistance. As part of the nomination process, the communities provided an action plan for

achieving the area's objective, such as restoration or economic renewal.



President Clinton will finalize the *American Heritage River* designations later this summer, and sponsoring communities will receive focused federal support for restoration and revitalization of their river communities. These "communities" can be towns, cities, sections of rivers, or entire watersheds.

Each designated *American Heritage River* community will receive Presidential recognition, and within 90 days of their official designation, the ten communities, assisted by local offices of federal agencies, will complete a framework document, or Memorandum of Understanding, that defines participant roles -- as these roles relate to the plan of action submitted under the nomination process.

Under Executive Order 13061, entitled *Federal Support of Community Efforts Along American Heritage Rivers* and signed by President Clinton on 9/11/98, agencies within the Executive Branch are authorized to coordinate existing federal plans, functions, programs and resources to preserve, protect and restore rivers and their associated resources important to our history, culture

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ture, and natural heritage. Accordingly, each *American Heritage River* will be provided a *River Navigator* — a federal employee who will serve the community for a period of up to 5 yrs. as a liaison to the federal government, helping people better understand how to access existing federal resources. River Navigators will be senior level federal employees with the depth of experience necessary to help access existing federal resources. They will come from existing staff resources, and may hold permanent or term status, or may be a professional paid from federal funds. It is anticipated that the ten River Navigators will be identified in the beginning months of FY99.

The AHRI has been criticized by some legislators, but Clinton Administration officials have stressed that the initiative does not mean new regulations but instead involves a focusing of existing services. Participation in the program is purely voluntary and contingent on full community support, according to the CEQ. Because of this early criticism a revision was added to the AHRI to allow legislators to cancel a river's nomination in their district. However, Sen. Gordon Smith (R/OR) said shortly after the selected rivers were disclosed that he had sent two letters to the Administration objecting to the inclusion of any Oregon river in the program, yet the Willamette River was chosen.

However according to CEQ officials, since Sen. Ron Wyden (D/OR) supported the Willamette's designation, its removal from consideration was not automatic. The program's guidelines say in a case where senators disagree, the advisory committee continues to judge the strength of the application in light of other members of the delegation's views. As for the Willamette decision, Reps. Earl Blumenauer (D/OR) and Elizabeth Furse (D/OR) had also given their OK, said a CEQ source. One House member may withdraw a river's nomination as long as it is in the lawmaker's jurisdiction, the rules say.

The Willamette River connects Eugene to Portland and therefore affects more than half of the state's population and two-thirds of Ore-

gon's economy, said Curtis Robinhold, natural resources policy coordinator for Oregon Gov. John Kitzhaber (D). It also lately has borne the brunt of the region's growth, Robinhold added. In the early 1970s, the Willamette River underwent a massive clean-up effort when high-level industrial dumping from paper plants was halted. Now, the river needs the same protection in the area of non-point source pollutants, he explained. "It's generally a good idea to focus federal energies on rivers," since landowners do not always know which services the different government agencies provide, he said.

Across the Nation, twelve of 126 communities who applied for the designation will not be considered because of opposition by their local Congressman or U.S. Senator. Stretches of 14 other nominated rivers may also

be out of the running. CEQ Chair Kathleen A. McGinty said her office received 45 letters from members opposing specific nominations, and 197 Congressional letters supporting nominations. "Comments by Members of Congress have run more than four-to-one in favor of the AHRI and we are pleased by this overwhelming show of support," said McGinty.

Source: Larisa Epatko, *Land Letter*, Vol. 17, No. 13; and Scott Faber, Staff Writer, *Missouri Monitor*, Vol. 1, No. 2, June 1998

Missouri River Dropped From Heritage Contest

Congressional opposition from Senators Sam Brownback (R/KS), Conrad Burns (R/MT), Chuck Hagel (R/NE) and Representatives John Thune (R/SD), Kenny

River Crossings

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River Crossings is a mechanism for communication, information transfer, and coordination between agencies, groups and persons responsible for and/or interested in preserving and protecting the aquatic resources of the Mississippi River Drainage Basin through improved communication and management. Information provided by the newsletter, or opinions expressed in it by contributing authors are provided in the spirit of "open communication", and do not necessarily reflect the position of MICRA or any of its member States or Entities. Any comments related to "River Crossings" should be directed to the MICRA Chairman.

Hulshof (R/MO), Rick Hill (R/MT), Ike Skelton (D/MO), Jim Talent, (R/MO) and Pat Danner (D/MO) to designation of the Missouri River as an *American Heritage River* persuaded the White House to eliminate Lewis and Clark's Big Muddy from consideration as an "American Heritage River".

"They want nothing to do with the program," Rep. Talent said of voters in his St. Louis-area district. He vetoed portions of both the Missouri and Mississippi rivers. "Frankly, I think it is a very sad statement that my constituents have so little trust in their government that they are willing to lose out on a potentially beneficial program than face a repeat of the bureaucratic nightmares they've dealt with in the past," Talent wrote in a letter to the White House.

Antagonism comes both from farm interests, who fear the initiative could divert money from agricultural programs, and property rights groups, who worry it could spawn new regulations. But, government documents reveal that the program will authorize no new spending, no land acquisition, and no new regulations.

Opposition to the AHRI has been led by a property-rights group called *Liberty Matters*, which warns that "this program has nothing to do with preserving America's rivers, but has everything to do with federal encroachment onto private lands and the destruction of individual liberty." The group warns that riverside communities along designated rivers will be subjected to "aerial photography and satellite surveillance" to police the program.

"This program is designed to make government more responsive to local needs, not more bureaucratic," said Chad Smith of the conservation group *American Rivers*. "Unfortunately, a few people with an anti-government agenda have ruined a terrific opportunity for riverside communities." He urged members of Congress who opposed the designation to do more to help local communities redevelop their riverfronts. "In the past, communities turned their back on the river. But today, communities are trying to re-establish the Missouri as a community center,

creating riverside parks and natural places connected by trails and greenways."

Source: Scott Faber, Staff Writer, *Missouri Monitor*, Vol. 1, No. 2, June 1998

National Focus on Wetland Restoration

Federal and state efforts to restore drained wetlands to their original condition is being driven by the "vital" role that marshes play in protecting drinking water, preventing floods and sustaining wildlife. "After decades of bitter wrangling over protecting wetlands with laws,...a new environmental movement" is taking shape to voluntarily restore these "dwindling and once-maligned natural systems."



U.S. Department of Agriculture (USDA) officials have been "roaming back roads ... persuading farmer after farmer" to flood fields and woodlands, and Pres. Clinton in 2/98 outlined an ambitious initiative calling for a net increase of 100,000 acres of wetlands/yr. by 2005.

Meanwhile over the past decade; along the Mississippi River in the Midwest, in Louisiana's bayous, and in the Florida Everglades; large scale restoration efforts have been "launched in the name of flood control or pollution clean up". Also in Maryland last year Gov. Parris Glendening (D) pledged to create or restore 60,000 acres of state marshland. Government officials there hope that by creating wetlands in the watershed they can revive the Chesapeake Bay, the nation's largest estuary, which is polluted with fertilizer from farm runoff.

An article in the *Baltimore Sun* points out the benefits of natural wetland restoration, saying that efforts to replace wetlands lost to development are often "disappointing" because it takes many years for man-made marshes to "match natural ones in the

richness of their plant and animal life." "Restoring wetlands where they used to be is usually faster, easier and cheaper than trying to create marsh out of upland." One Maryland project to replace wetlands lost to development cost the state nearly \$100,000/acre. But under the USDA Wetland Reserve Program, more than 100,000 acres are restored annually at a cost of only \$1,000/acre.

Sources: Timothy Wheeler, *Baltimore Sun*, 6/7/98; National Journal's GREENWIRE, *The Environmental News Daily*, 6/9/98

States Enhance Protection of Riparian Areas

While most states are still banking on voluntary measures to reverse streambank degradation and Non-Point Source (NPS) pollution impacting water quality, others are starting to take more aggressive action.

Massachusetts recently finalized regulations for implementing its new *Rivers Protection Act*, which establishes a 200 ft. wide buffer zone along the state's perennial rivers and streams. Developers who wish to build in the zone must demonstrate that there is no reasonable alternative to construction in the protected area. They must also outline how their proposed project will minimize impacts related to flooding, water supply, ground water, shellfish, aquatic habitat, storm drainage, and fishing. Convened by the Massachusetts Department of Environmental Protection, an eight member advisory board drafted the *River Protection Act* regulations. Board members included environmental advocates, farming interests, property owners, developers, and real estate interests. State officials hope that the new law will address most of the state's water resources (nearly 67%) that are currently listed as impaired, and will promote a more proactive approach to protecting water quality.

North Carolina adopted a riparian protection measure in June 1997, when Governor Jim Hunt, members of the *Environmental Management Commission*, North Carolina Department of Environment, Health and Natural Resources Secretary Jonathan Howes, and state legislators teamed up on a

plan to reduce nitrogen pollution and riparian destruction along the Neuse River. The plan, announced after exhaustive research and consensus-building, established a 50 ft. protected, vegetated zone on each side of the river. Tough new rules for stormwater management in urban areas, fertilizer applications, and sewage treatment plant discharges were also enacted to reduce the amount of nitrogen and phosphorus polluting the river.

New Hampshire implemented a comprehensive shoreland protection act last year to manage activities within 250 ft. of lakes, ponds, rivers, and coastal waters. The new shoreland rules are targeted at maintaining effective buffers of trees, shrubs, and ground cover to filter and absorb pollutants and runoff. A minimum 20 ft. setback is required for construction of sheds, garages, or other structures, with a mandatory maximum "footprint" set at 150 ft². Coordinated review of riparian activities will eliminate unplanned and piecemeal development in the state, according to Department of Environmental Services Commissioner Robert W. Varney.

Illinois sweetened the pot for voluntary protection of riparian areas by adopting a five-sixths property tax exemption for vegetated buffers managed in accordance with a plan approved by the county conservation district. The protected zone must be at least 66 ft. wide, meet USDA Natural Resource Conservation Service standards, and contain vegetation that "has a dense top growth, forms a uniform ground cover, has a heavy fibrous root system, and tolerates pesticides used in the farm field."

The USDA recently approved plans, designed by Minnesota and Illinois with *Environmental Defense Fund (EDF)* assistance, to restore up to 420,000 acres of wetlands, forests, and native grasses along the Minnesota and Illinois rivers. The new programs will pay farmers to retire flood-prone or eroding cropland along the rivers and to recreate natural buffer zones to prevent runoff of farm chemicals. The plans combine state funds with the \$2 billion annual



federal Conservation Reserve Program. EDF attorney Tim Searchinger worked closely with officials in Illinois and Minnesota to design the model plan. "Each plan will restore far more natural area around a river than any previous river restoration plan in the country," Searchinger said. "By comparison, the Kissimmee River project in Florida, often considered the largest river restoration plan in the U.S. will recreate 25,000 acres of wetlands." "The Minnesota plan will turn the Minnesota River back into one of the few large rivers in the United States with an intact floodplain," Searchinger said. "The two plans will nearly double the floodplain habitat on the upper Mississippi River system," he added. Total costs of the Illinois and Minnesota plans will exceed \$800 million, with roughly 75% coming from federal agriculture funds. State funds will help the farmers replant forests and restore wetlands and will extend temporary federal agreements into permanent conservation commitments for most of the restored lands. EDF is now helping other states; including New York, North Carolina, Oregon, and Pennsylvania; to develop enhancement programs.

Wisconsin is proposing a plan to preserve prairie along the Chippewa River that provides habitat for several birds on the state endangered species list. The 2,000 acres of bottomlands and slopes along the river encompass the "largest concentration of prairies we know of anywhere in the state," according to Department of Natural Resources biologist Randy Hoffman. Officials hope to encourage land preservation in a 250,000 acre area by giving financial aid to landowners.

Six endangered birds inhabit the targeted land: the red-shouldered hawk, acadian flycatcher, cerulean warbler, hooded warbler, Kentucky warbler and yellow-crowned night heron. In addition, the lower Chippewa River provides habitat for the endangered paddlefish and the crystal darter.

Sources: *Nonpoint Source News-Notes*, April/May 1998, Issue #51; *EDF Letter*, Vol. XXIX, No. 3, June 1988; *AP/St. Paul Pioneer Press*, 7/14/98 and *National Journal's GREENWIRE, The Environmental News Daily*, 7/17/98

Missouri River Habitat Restoration - Nebraska Style

The Nebraska Game and Parks Commission's 1,637 acre, 3.5 mile long Hamburg Bend Wildlife Management Area (WMA) is restoring a remnant of the Missouri River channel near Nebraska City to near-natural condition after 85 years of human modification.

Hamburg Bend WMA is the first of six or more such sites to be developed in Nebraska, and among the first of 25 to 30 planned by the four lower Missouri River states between Sioux City, IA and the river's mouth near St. Louis. Many sites are being restored to near natural conditions, while others are enhancing specific habitat features. The U.S. Army Corps of Engineers is undertaking the restoration as "mitigation" to undo some of the damage done to the river ecosystem in 85 years of channelization. Although this effort represents only a tiny fraction of the Missouri River, restoration of this area and of others to follow provide reasons to hope for a brighter future for the beleaguered river.

The River's problems date back to the early 20th century when policies of the federal government and the Corps of Engineers reflected the prevailing attitudes of the time -- Nature was to be subdued to serve humans and their economic needs. Significant river modification began in 1912, when Congress authorized the *Missouri River Bank Stabilization and Navigation Project* --, calling for channelization between St. Louis and Kansas City to accommodate commercial navigation traffic. The project was modified over the years to

create larger navigation channels and, in 1945, to extend navigation upstream to Sioux City. Meanwhile, in Montana, North Dakota and South Dakota, the river was dammed and its valley flooded by a series of reservoirs built primarily for flood control.

Before those modifications, the Missouri wound through its floodplain, flowing in several channels separated by islands and sandbars. Chutes carried smaller flows in shortcuts across the bends, and some chutes and old channels no longer connected to the river during low flows formed lakes and marshes of standing water replenished only when the river rose. Those components of the natural river offered a variety of habitats for fish and wildlife.

Fish could find water that was fast or slow, deep or shallow, according to their needs. Bare sandbars surrounded by flowing water afforded security to migrating ducks and geese in spring and fall and to nesting shorebirds in summer. Wooded islands and banks were havens for beavers, deer, foxes, owls and dozens of other species. Marshes and sloughs harbored raccoons, muskrats, bullfrogs and broods of ducklings. Between Sioux City and St. Louis, 300,000 acres of flowing water, wetlands, sandbars, islands and timber lay between the river's high banks. Besides providing habitat, the marshes and sloughs along the river absorbed the annual spring and summer high water and more severe floods as well, releasing excess water gradually when the river could accommodate it.

Before its valley was settled, the Missouri's floods were not destructive, as we now view them, but beneficial events that rejuvenated the river. Floodwaters, especially those carrying ice, scoured out wetlands and chutes, created deep water and shallows, moved sandbars and sometimes even cut an entirely new river course. Floods sculpted aquatic and terrestrial habitat, interrupted plant succession and created great habitat diversities. As it spread out across the landscape, the flooding river replenished its food chain by picking up organic nutrients from all the forests, marshes and prairies it touched.



Since 1912, "improvement" projects have concentrated the river into a single narrow, deep navigation channel, and attempted to contain its floodwaters within levees. Dikes and revetments eventually squeezed the river into its present channel. But in the process, the sloughs, chutes and wetlands that gave the old river its diverse fish and wildlife habitat were cut off from the river and left to wither and die. Protected from scouring floods by dikes and levees, chutes and wetlands filled with silt carried in by high water and eventually became

high and dry enough, at least some of the time, for agriculture, commerce and other uses.

Today, the original 300,000-acre channel below Sioux City has shrunk to 112,000 acres, the 188,000 acres of water surface has declined to just under 88,000 acres, and the river channel has been shortened by 127 miles! The river has lost nearly all of its diversity; most of the remaining water flows in a single deep, swift channel. In addition, 68,000 acres of islands, woods and sandbars disappeared, becoming almost nonexistent -- only a thin band of cottonwoods lines the river bank in most areas. With many of its fish and wildlife species declining or listed as threatened or endangered, the decline of Missouri River habitats has become a national issue. In 1997, the conservation organization *American Rivers* placed the Missouri at the top of its list of the nation's most endangered rivers.

A 1981 report and environmental impact statement compiled by the U.S. Army, Corps of Engineers tallied habitat losses along the river and proposed remedies. The report was followed by the *Water Resources Development Act of 1986*, the Corps' latest environmental mandate from Congress, making possible Hamburg Bend and other projects in Nebraska, Iowa, Kansas and Missouri.

Preliminary studies and planning began in 1989, and the Hamburg Bend project began in 1992. Then came the floods of 1993, and little mitigation work took place that year. But the flood generated public awareness of the Missouri, and demonstrated the folly of encroaching too heavily on the floodplain and the futility of trying to control the river only with expensive structures. Many landowners who built or farmed on accretion ground saw their property destroyed and farm ground stripped of topsoil or covered with sand.

The flood also showed that people had a false sense of security about the Missouri River, as recognized in a report on the flood of 1993 by the Clinton Administration's *Interagency Floodplain Management Review Committee*. "Local and federal flood damage reduction projects were constructed to minimize the annual risk.... Some of these programs, however, attracted people to



Aerial view of Nebraska's Hamburg Bend Wildlife Management Area. Note development of the complex network of off-channel waters on the floodplain.

high-risk areas and created greater exposure to future damages," the report stated. "Since 1993, more attention has been given to non-structural aspects of floodplain management," said Larry Buss, chief of Floodplain Management Services for the Corps of Engineers' Omaha District. "We can deal with floods in two ways. We can take the water away from people and buildings with channels, levees and dams. That's called the 'structural approach'. Or, we can take the people away from the water and the floodplain. That's the 'non-structural approach.' The flood of '93 showed us that the 'structural approach' is not the total answer."

When fair market price was offered for the land by various federal and state agencies in an effort to remove people from areas subject to flooding, many sold, including those who farmed the land that is now Hamburg Bend WMA. The Hamburg Bend restoration, like all the mitigation projects in the program, is funded entirely by federal money administered by the Corps. Land purchased will remain Corps property, but the Nebraska Game and Parks Commission will lease and manage Hamburg Bend as well as other mitigation sites in the state. The Corps also surveyed and designed the project and contracted excavation and construction.

Hamburg Bend is the most innovative and most natural of the mitigation

projects on the river so far. Like other sites planned for Nebraska, it features re-establishment of the river's flow through the upper and lower ends of an old chute. "We must reconnect the river to its floodplain. Floods regenerate floodplain habitat," said Commission biologist Scott Luedtke.

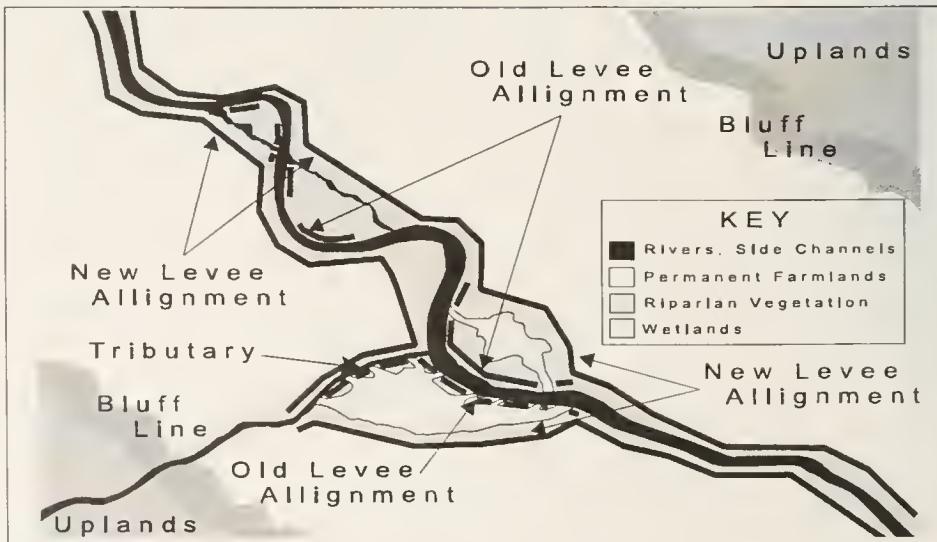
The Corps re-created the original chute at Hamburg Bend using old maps and photographs for reference. Commission biologists hope the river will enlarge the chute, creating a variety of depths and establishing new bends, side-channels and sandbars. The chute and connected waters will provide fish with velocities and depths of water not available in the channelized river.

Biologists believe it is important for the entire area to remain "active," always subject to change at the hands of the river. The chute must move laterally and be subject to flooding to re-create habitat and to pick up nutrients from the land and return them to the river. Biologists believe that the flow-through approach is the best and most natural because it allows the river itself to create habitat diversity.

Because of high flows in the river, much of Hamburg Bend was underwater during the summer of 1997, and the area has been wet much of the time since 1993. When drier years come, as they inevitably will, biologists expect the main chute to remain, but side chutes, wetlands and backwaters are likely to be smaller. The river will vary year to year. Whether water is high or low will matter little for Hamburg Bend, restored as closely as possible to what it was before channelization. Occasional flooding will help keep it a wild place, with no development beyond that necessary to provide access for waterfowl hunters, anglers and others who appreciate wild places.

Nebraska's other planned restorations include:

- Blackbird-Tievile-Upper Decatur Bends: Restoration of three chutes on the east bank along 8 mi. of river north of Decatur. Targeted are 2,485 acres in Iowa and 1,502 acres in Nebraska. Planning and land acquisition are under way.



Schematic diagram of "natural" floodplain restoration concepts being employed by some state and federal habitat restoration projects along the Missouri River.

- Middle Decatur Bend: Planned restoration of a chute on a tract with 3.5 mi. of river frontage on the east bank below the Blackbird-Tieville project. The area will total 812 acres. Planning is under way.
- Tobacco Island: Restoration of a chute on a 1,604-acre tract with 3.5 mi. of river frontage southeast of Plattsmouth. Planning and land acquisition are under way.
- Kansas Bend: Chute restoration on a narrow tract along 5 river miles northeast of Peru. The project targets 1,247 acres. Planning and land acquisition are under way.
- Langdon Bend: Chute restoration on a site with 4 mi. of river frontage extending from near the Cooper Nuclear Power Station east of the village of Nemaha. Land acquisition for the 1,149 acre project is nearly complete and planning is under way.
- Rush Bottom Bend: Chute restoration along 3 river mi. on 1,139 acres on the east bank northeast of Rulo. Planning and land acquisition are under way.

Nebraska's river restoration effort dovetails nicely with similar work being proposed and developed in the neighboring states of Iowa, Kansas, and Missouri. Also, the U.S. Fish and Wildlife Service's Big Muddy National Fish and Wildlife Refuge complements the states' projects by proposing to create a string of restored floodplain habitats from Sioux City, IA to St. Louis, MO. These restored state and federally sponsored habitats will not only address wildlife management and endangered species issues, but will also provide a margin of enhanced flood protection for floodplain landowners and communities located nearby. The beauty of these restorations is that land acquisitions have all been from willing sellers, and in cooperation with local landowners.

This is not a government land grab! It is truly a success story that came as the result of the 1993 flood, and as the product of many years of hard work by an interdisciplinary team of state and federal biologists, working together to restore some semblance of the historic Missouri River's aquatic ecosystem. This project is creating a legacy that will be left for future generations to enjoy just in

time for celebration of the 200th Anniversary of Lewis and Clark's "Exploration of Discovery" into the Louisiana Territory.

If Captain Lewis were here today, he would likely recognize many of the habitats being restored within the "string of habitat beads" that state and federal wildlife management agencies are working together to restore along the entire length of the lower Missouri River!

Source: Ken Bouc and Michael Forsberg, *NEBRASKAland*, Vol. 76, No. 2, March 1998

Missouri River Reservoir System Creel Survey/EIS

For the first time ever, anglers fishing the five largest Missouri River System reservoirs (Ft. Peck, Sakakawea, Oahe, Sharpe and Francis Case) in Montana, North Dakota and South Dakota were systematically surveyed in 1997. Creel surveys are conducted periodically on many water bodies to assess fishing effort, harvest and angler preferences. Each of the six Missouri River System reservoirs have creel surveys conducted ranging from every year to once every six or so years. However, a special effort was made in 1997 by the respective state biologists to coordinate creel surveys so that system-wide estimates of use and harvest of different species could be made for most of the Missouri River System reservoirs during the same year.

Results of this multi-state creel survey revealed that anglers spent over 5.3 trillion hrs. fishing during the open water daylight time period in 1997. Nearly 1.7 million fish were harvested including more than 1.4 million walleye. Northern pike were the sec-



"walleye"

ond most harvested species followed by white bass, smallmouth bass, and channel catfish. Close to \$92 million

worth of direct economic benefits were generated by Missouri River System anglers in 1997 and the overall economic impact created by anglers would be considerably higher.

For comparable reservoirs, fishing effort in 1997 was nearly 60% higher than that experienced in the early 1990's. This significant increase differs from the national trend of relatively stable fishing participation. The leading cause for this notable increase in fishing effort is an increase in reservoir fish populations, especially walleye. During the late 1980's and early 1990's fish populations were hurt by a six year drought which caused 10-25 ft. reductions in water elevations. Fish populations rebounded quickly when the reservoirs began refilling in 1993 resulting in the good fishing in recent years.

Reservoir water elevations are determined by the management practices of the Army, Corps of Engineers (Corps). And now after "nearly a decade of struggling" over a new Missouri River management plan, the Corps says it may change its practices to benefit fish and wildlife. Three of eight options included in a new draft Missouri River Basin management plan would control releases from six dams to improve wildlife habitat. The Corps will seek public input throughout the 10-state basin in August through the scheduled release of their *Preliminary Revised Draft Master Manual EIS*. A preferred alternative is expected to be selected by October.

Significant issues at stake in the Manual for recreation and fish and wildlife are:

- the importance of keeping water in the reservoirs to serve the needs of recreational use which generates significant benefits to several states and a wide geographic area vs draining the reservoirs to serve the needs of what most consider to be an insignificant Missouri River Navigation Project;
- the importance of managing reservoir pool elevations to meet the needs of the significant recreational fishery and to meet the needs of several threatened and endangered species; and
- the need, ability, and willingness to alternately (i.e. on a three year rotation) manage water elevations of the three big reservoirs for periodic drawdown, followed by flooding of vegetation to enhance recruitment and growth of

aquatic organisms. These draw downs would be much smaller than those seen during the late 1980's drought, but large enough to stimulate extensive growth of the shoreline vegetation needed to enhance fish production during high water years. Drawdowns would also be coordinated (on a similar three year rotation) in order to supply the flows needed for fish spawning and recruitment below some of the dams.

Such changes in reservoir operation would help to guarantee sustained reservoir fisheries like those presently being enjoyed in the large Missouri River reservoirs. The current fishery is a direct result of water storage during the 1993 flood that followed the drought of the late 1980's. Under the recommended scenario (i.e. three year rotation described above) the drought/flood cycle would be artificially reproduced, alternately recharging the fisheries of the three large reservoirs with large year classes of fish once every three years.

Readers are encouraged to review the Corps' *Preliminary Revised Draft Master Manual EIS* and provide comments.

Sources: Patricia Stockdill, *Bismarck Tribune*, 5/20/98; National Journal's GREENWIRE, *The Environmental News Daily*, 5/22/98; and Missouri River Natural Resources Committee, c/o DeSoto National Wildlife Refuge, 1434 316th, Missouri Valley, IA 51555-7033; For more information contact: Greg Power, North Dakota Game and Fish Department (701) 328-6323 or Jim Riis, South Dakota Game, Fish and Parks Department (605) 773-6770

Illinois River Restoration

A Restoration Project for the Illinois River is being developed and implemented by the *Illinois River Strategy Team*, chaired by Lieutenant Governor Bob Kustra. It is described as a project that will:

- demonstrate that restoration of aquatic landscapes in the Illinois River Basin can produce benefits for the entire river valley that are greater than the costs of the restoration;

- show how to incorporate restored wetlands into the watershed in ways that others can emulate that do not penalize the private landowner; and
- show how restored wetlands can generate revenue by producing alternative crops, providing recreational opportunities and performing other useful functions.

Drainage patterns of the modern Illinois River were formed over the course of 10,000 yrs. by the interaction of varying climatic and hydrologic conditions with glaciation, precipitation, topography, soils, vegetation and wildlife. Wetlands were everywhere. At least 18% of the 30,000 mi² basin was once covered with wetlands. As trappers and settlers spread across the region, the prairie was drained, beavers and their dams were destroyed and the humus-rich soils gradually wore out. Only 2% of the basin retains wetlands today.

Restoring wetlands involves more than just plugging a ditch or removing a levee. These simple techniques are useful, but it takes much more to recreate all the functions and components of a wetland ecosystem. Through careful engineering design, certain features can be enhanced to make the site most useful. Restoration concepts being employed by the Illinois River Restoration Project include the following:

Landscape Restoration: Restoring the hydrology, topography and plant communities can recreate entire landscapes in the same or similar arrangement and scale as they were prior to settlement. Landscape restoration provides easy access to the functions that wetlands performed-- water quality improvement, stormwater detention, flood damage reduction, soil stabilization, groundwater recharge, nutrient cycling, and food chain support.

Habitat Restoration: Habitat restoration is a component of landscape restoration that is designed to attract targeted wildlife. Targeted species may include mussels, snails, crustaceans, insects, fish, birds, reptiles, amphibians and mammals. The species' natural habitat requirements are replicated on the site, including identified and appropriate plant communities

and species that provide shelter and food.

Sediment Control: High-energy flood flows carry large loads of sediments that can damage ecosystems, smother cropland and clog flood storage areas. Wetlands are excellent mechanisms for reducing flood flows and removing sediment loads.

Upland Watershed Management: The most effective way to control downstream flood flows is to hold and absorb rain and snowmelt in the upper watershed with the widespread application of soil conservation techniques, controlled drainage and networks of small holding ponds and check dams. These techniques, planned in a complementary and consistent way, make up a watershed management plan.

Economic Enhancement: The best restoration sites are usually on converted cropland that floods frequently and receives government disaster aid, levee repair subsidies and crop insurance payments. Alternative crops and other income-producing activities developed on these marginal lands, when combined with the savings in federal payments, provide benefits that exceed the costs of restoration.

The Illinois River Restoration Project will include a set of demonstration projects placed strategically along the river channel and within the watershed. A description of some of those projects follows:

Wildlife Habitat Restoration: Two projects being developed cooperatively with *The Nature Conservancy* include one in the Little Creek Drainage District in Brown County and the another at the Emiquon National Wildlife Refuge in Fulton County. These projects will restore the natural flood pulse of the river to the floodplain in order to improve wildlife habitat and provide recreation and water quality benefits. They will demonstrate how to successfully manage a wetland environment adjacent to the Illinois River, dealing with such problems as summer floods and high sediment loads.

Tributary Creek Restoration: This project will illustrate the benefits of reducing the high flows and sediment loads associated with tributaries to the

mainstem Illinois River and backwater lakes by replicating beaver activity with a series of check dams. Behind each dam, built on the deposited bedload materials, wetlands will be created that would provide wildlife habitat or be suitable for grazing livestock. Work is being initiated in the Senachwine Creek Watershed in Bureau and Putnam counties.

Backwater Lake Revitalization: This project will demonstrate the feasibility of reducing turbidity, restoring aquatic and emergent plant communities and diversifying fish and macroinvertebrate populations in a backwater lake. Techniques that are being considered for testing include the consolidation of bottom sediments, controlling the resuspension of silt by carp and manipulation of soil chemistry. Swan Lake, in Putnam County, will be a demonstration site.

Water Pollution Abatement: This project will divert a portion of the river to create a constant shallow flow over a restored wetland for water treatment purposes. It will demonstrate the capability of the wetland to reduce turbidity and remove nitrogen and other pollutants from the river. The project will explore the feasibility of economic incentives such as a water pollution trading program.

Floodplain Flood Storage: This project will test the feasibility of purchasing flood easements on land located behind levees. It will show how a floodplain can be managed, through the use of a water control device, to reduce flood peaks by providing additional flood storage during large flood events, without negatively impacting the property owners behind the levee.

Alternative Farming Practices: This project will experiment with a variety of income-producing crops and economic uses of natural floodplains that can tolerate moist soil conditions and periodic inundation of water. This will be done by working directly with farmers to assist them in testing new farming methods.

Source: *The Wetlands Initiative*, 53 West Jackson, Suite 1015, Chicago,

IL 60604, (312) 922-0777, FAX (312) 922-1823, wetlands97@aol.com

Iowa River Floodplain Restoration

Wildlife and natural resources officials are pleased with wetland restoration efforts along the Iowa River. "We are beginning to see the benefits of letting floodwater spread out and letting the flood plain function as a flood plain," said Tim Julison, refuge operations specialist with the U.S. Fish and Wildlife Service at Wapello, Iowa. With natural wetlands re-establishing themselves, "we are seeing tremendous benefits to waterfowl, especially during the spring migration," Julison said.

Besides providing wildlife habitat and cushioning the impact of flooding for landowners, Dave De Geus, wetlands coordinator for the Iowa County Soil and Water Conservation District, said the corridor should function as a giant filter, improving water quality in the Iowa River and its tributaries.

For at least a month this Spring the Iowa River again spilled out of its banks and onto its floodplain between Tama and Marengo drowning cornfields that stood in the way. This was yet another in a long string of costly disappointments to adjacent landowners. After the 1993 flood some of these frequently flooded lands were set aside as part of the *Iowa River Corridor Project*. It has taken about 12,000 acres of farmland out of production along a 30 mi. stretch of the Iowa River, said De Geus.

The project is part of the Emergency Wetland Reserve Program made available in Iowa and other Midwestern states after the 1993 flooding. Through the reserve program, landowners with flood-prone cropland received a one-time federal payment to permanently retire high-risk cropland and restore it to wetlands, timber or native grass.

The U.S. Fish and Wildlife Service has since purchased the remaining interest (i.e. the difference between the dollar amount of the easement and the full market value of the land) in about 7,500 acres of these easement lands, making them available for public recre-

ational uses such as hunting and hiking. The privately owned easements, while beneficial to wildlife and the environment, are not open to the public.

Virgil Head, who farms near Marengo, IA and owns some of the easement lands, said he thinks the corridor project is "definitely a decent program." "With the river bottoms flooding three out of five years, it allowed some people to get out of a bad situation," he said. Head's only criticism of the program is that to protect wildlife, the easement bans haying or grazing before July 15. That late date, he said, hampers his ability to recover enough forage from the property to pay the taxes on it. The latter is one reason some landowners have opted to sell their remaining interest in easement lands to the U.S. Fish and Wildlife Service for placement with the National Wildlife Refuge System.

Source: *Omaha World-Herald*, 7/6/98

Everglades Restoration Plan

In what water managers are calling "the largest, most complex ecological restoration ever," the Army Corps of Engineers has crafted a \$7.5 billion plan to create a "healthier, more natural" Everglades over the next half century. The plan, selected during a meeting in early June of Federal, State and local officials, would aim to overhaul the nearly 50 yr. old, 1,600 mi. long drainage system the Corps built through central and southern Florida. It also calls for creating 286 mi² of reservoirs and marshes and "hundreds" of storage wells, as well as for bulldozing some Everglades canals and levees to restore natural water flows to area marshes.

Supporters say the plan would aid a "wide variety" of wildlife by adding months to the nesting season of wading birds, some numbers of which have declined by 90% in recent decades. But some State and Federal scientists are skeptical, saying the plan goes too far in serving cities and farms without fully restoring the Everglades's natural water flow. A revised version of the proposal, expected to be released in 10/98, will be followed by public hearings. If approved by Congress, Corps officials expect the federal government to pay for half of the project, with the

rest coming from state and local sources.

Sources: Robert King, *Palm Beach Post*, 6/5/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 6/11/98

Snake River Restoration

A new report by the *Oregon Natural Resources Council* (ONRC) shows how retiring four dams on the Lower Snake River will result in an annual savings of \$87 million for the region, as well as save important fisheries. *Restoring the Lower Snake River: Saving Snake River Salmon and Saving Money* (1998) clearly explains the economic and environmental benefits of removing the four dams, which are blamed for killing 81% of ocean-bound juvenile fish and 40% of returning adults. The report notes that the government has already spent \$1.7 billion attempting to bring salmon runs back to health.

"We have paid to transport salmon for hundreds of miles in trucks or barges just to get them past dams. We have built multi-million-dollar dam bypass systems, and supported hatcheries just so a few young

salmon will survive the gauntlet of dams. We have been poor stewards: our fish are still dying. It is time to stop treating the symptoms and address the root cause of their decline. Dams kill salmon. Perhaps even more significantly, dams destroy rivers, and salmon need rivers."

The authors estimate that dam removal could result in sustainable populations of salmon within 20-25 years. This highly recommended reading is available for \$5 from ONRC, 5825 North Greeley, Portland, OR 95217-4145, (503) 283-6343, FAX (503) 283-0756, info@onrc.org.

Source: *World Rivers Review*, Vol. 13, No. 3, June 1998

UMR Navigation Plan Will Waste Billions/Threaten Environment

Paul W. Hansen, Executive Director of the *Izaak Walton League of America* (Iwles) in a 5/21 *Minneapolis Star Tribune* editorial, said the U.S. Army Corps of Engineers' six-year, \$50 million study of the navigation infrastructure of the Mississippi River will propose billions of dollars in wasteful

and unnecessary spending for the Upper Mississippi River (UMR). Hansen, calling the project the largest public works project in American history, said the study will be released to Congress and the public this summer.

Hansen described the UMR navigation project as "...the most expensive, highly subsidized and unreliable segment of the inland waterway system." On the other hand, he described the UMR ecosystem as "the most ecologically valuable...home to...50 species of mammals, 45 species of reptiles and amphibians, 37 species of mussels and 241 species of fish. The most ancient lineage of freshwater fishes in North America, including sturgeons and paddlefish, are found in the river. It is the migration corridor for up to 40 percent of North America's waterfowl, in addition to millions of other birds. More than 267,000 acres of national wildlife refuge lands are located on the river between Minneapolis and St. Louis, as are more than 60 state conservation areas. This natural splendor of the Upper Mississippi River attracts 12 million visitors a year -- more than Yellowstone National Park. The river supports a growing recreational economy estimated at \$1.2 billion and 18,000 jobs a year. With recreation demand skyrocketing, this value will only increase."

Hansen said, "According to river biologists and managers, 'the ecological collapse of one of the world's great rivers may be just around the corner -- unless steps are taken to change the way the river is managed.' The impoundments or 'pools' created by the navigation system are trapping contaminated sediment and pollutants, which are choking the productivity of the entire ecosystem. River barges resuspend contaminated sediments, which reduces plant and animal growth."

Hansen said, "Twenty years ago, when the Corps proposed a billion-dollar replacement of Locks and Dam 26, the *Izaak Walton League* charged in U.S. District Court that this was just the beginning of a major expansion. The judge found the Corps' denial to be 'unworthy of belief.' Today we know he was right, and today history is repeating itself."

"The billions the Corps is asking for



Navigation projects impact aquatic ecosystems in many ways. Some impacts include the following: (1) Side channel closures isolate and lead to sedimentation in off-channel waters in order to maintain adequate navigation depths in the main channel; (2) Dredging is required to remove main channel shoals, and dredged material is often side cast into adjacent off-channel waters; (3) Toxic and chemical spills occur periodically from leaking barges and barge accidents; (4) Intermittent water drawdown along shorelines and in backwaters is caused by the water displacement of passing barges; and (5) Turbulence reaching all the way to the main channel bottom is caused by the 9 ft. diameter propellers of modern towboats which displaces and destroys organisms and reduces water clarity by stirring up bottom sediments.

now", Hansen said, "is also just a down payment on much more spending that it is not telling us about. The waterway system includes 29 locks and dams on the Mississippi and another eight on the Illinois River. Most were built in the 1930s, with an anticipated 50-year life span. Today, much of the system needs repair or replacement and the safety of several dams is being questioned. Most of the system will need to be replaced if it is to continue to operate into the 21st century."

Hansen said, "The barge industry gets more than \$600 million per year in subsidies, but pays absolutely nothing for the operation and maintenance of the river, and very little for new construction projects. If you visit a Corps recreation site for a day with your family, you pay more in user fees for operation and maintenance than the entire barge industry. At the *Izaak Walton League*, we think that the \$600 million subsidy could be much better spent on environmental restoration projects or reducing the federal debt. The special interests are lining up at the pork barrel on this one. Congress should stand behind the basic concepts of users pay, budget reduction and responsible environmental protection by rejecting this proposal."

Contact: Paul W. Hansen, *Izaak Walton League of America*, 707 Conservation Lane, Gaithersburg, MD 20878, (301) 548-0150

Miscellaneous River Issues

Alabama Waterway Pollution: Alabama Attorney General Bill Pryor in May filed a notice of intent to sue a Dalton, GA-based company for allegedly polluting Alabama waterways by discharging improperly treated waste with high concentrations of nitrogen, phosphorus and raw sewage. The *Dalton Utilities Board*, which accepted waste from "several" carpet mills, does not have a State permit to treat and discharge waste, according to the environment division of the attorney general's office. In early June state officials warned residents not to eat fish from some Alabama waters after an annual state Dept. of Environmental Management survey

found chemical PCBs, mercury and other toxics in several lakes and rivers. The health advisories primarily affect the Fowl River and Lay and Logan Martin lakes. Sources: Alabama Attorney General's Office release, 5/20/98; Garry Mitchell, *AP/Birmingham Herald* online, 6/4/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 6/30/98

Alaska Salmon Pollution: Industrial and agricultural pollutants that have contaminated isolated Alaska lakes may have been introduced by migrating salmon, according to a study reported in the 3/98 issue of the journal *Arctic*. A team of scientists led by Goran Ewald of Sweden found that salmon absorb and accumulate PCBs,



"Chinook Salmon"

DDT and other pollutants while at sea and carry the toxins to the lakes when they return to spawn. After spawning the salmon die and the toxins are released to the environment by their dead and decaying bodies. Sources: Don Hunter, *Anchorage Daily News*, 5/22/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 6/30/98

Arkansas River Flows: The Arkansas River flowed continuously across Kansas from Colorado to the Oklahoma State line for 331 of 365 days in the 1997 water year (10/1/96 to 9/30/97) — the most since the early 1970's. The Arkansas River at Garden City gaging station, which was dry the entire year in 1992, flowed 331 days in 1997. The mean annual streamflow at this gaging station for 1997 (196 cfs) was higher than the mean annual streamflow (183 cfs) for any year since records began in 1923 for the second consecutive year. Above normal precipitation in northwest Kansas and releases from reservoirs in Colorado probably account for the continuous and increased flow at this gaging station. Two gaging stations in western Kansas, which are normally dry October through May — Beaver Creek

at Cedar Bluffs and Smoky Hill River at Elkader -- flowed the entire period. Above normal precipitation during the last part of the 1996 water year may explain this flow pattern. A record high water level occurred on 2/25/98, in Keith Sebelius Lake near Norton in northwest Kansas (34-year record). Source: USGS Water-Data Report KS-97-1. Contact: Jim Putnam, U.S. Geological Survey, WRD, 4821 Quail Crest Place, Lawrence, KS 66049-3839, (785) 832-3573

Atchafalaya River Wetland Project: A "massive" two-part wetlands project that will create about 4,000 acres of wetlands in the Atchafalaya River Delta is nearing completion. The project aims to create more than 900 acres of wetlands with dredged sediments and set in motion the "natural processes" that will create another 3,000 acres over the next 20 yrs. Sources: Louisiana Dept. of Natural Resources release, 6/23/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 6/11 and 6/25/98

From Sewage Water To Tap Water: Tampa, FL's plan to use highly treated wastewater to augment the area's drinking water supply is safe but would require constant monitoring, according to a study released on 6/14 by a panel of eight scientists. The scientists, who studied the Tampa Water Resource Recovery Project, said that the treated wastewater from the city's sewer plant would meet all health requirements for drinking water quality. But they recommended that the city constantly monitor and test for potential health risks. John Rose of the *University of South Florida*, who led the panel said, "Any time you're recycling wastewater, even if not for potable use, there are concerns that need to be addressed". Meanwhile, a California citizens group has persuaded the state Department of Health to postpone its decision on whether to approve two projects that involve pumping highly treated waste water into the Livermore-Amador Valley drinking water supply. A report by the Safe Water Committee raised concerns about the



possibility of hazardous substances escaping the sewage treatment process and polluting the aquifer. Sources: Neil Johnson, *Tampa Tribune*, 6/14/98; Lisa Vorderbrueggen, *Walnut Creek [CA] Contra Costa Times*, 6/11/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 6/16/98

Georgia Pollution Guidelines: The Georgia Board of Natural Resources has adopted "controversial" guidelines that will give the public input on how environmental rules will be enforced. The new rules require the director of the state Environmental Protection Division (EPD) to notify the public of plans to issue consent orders against businesses that allegedly polluted the environment. Strong public reaction during 30-day comment periods could force the EPD to impose stricter penalties against violators. Sources: Charles Seabrook, *Atlanta Constitution*, 5/21/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 5/26/98

Gobies May Be Toxic: Scientists warn that a non-native fish in the Great Lakes raises toxin levels in indigenous fish and could pose "a serious health risk" to humans who eat gamefish. The round goby, a



"round goby"

small fish native to the Black and Caspian Seas, feeds on non-native zebra mussels -- which often carry concentrated amounts of toxics because they act as water filters. The gobies in turn bring those toxics "up the food chain into the top predator fish and into man," according to David Jude, *Center for Great Lakes and Aquatic Sciences* at the *University of Michigan* in Ann Arbor. Scientists from the U.S. Geological Survey *Great Lakes Science Center* in Ann Arbor are experimenting with an electrical barrier to block the goby from spreading into the Mississippi River system. Meanwhile, the USEPA has issued an advisory recommending people not eat more than one Great

Lakes fish/week. Sources: Gene Schabath, *Detroit News*, 3/23/98; Dean Rebuffoni, *Minneapolis Star Tribune*, 3/25/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 3/26/98

Indiana Visa Card: A new Visa card for "nature lovers" being promoted in Indiana will give a "small portion" of each transaction to the *Indiana Natural Resources Foundation* to buy and protect public lands. Sources: Kyle Niederpruem, *Indianapolis Star-News*, 7/14/98 and National Journal's GREENWIRE, *The Environmental News Daily*, 7/16/98

Kishwaukee River Pollution: Environmentalists have filed an appeal to void a permit issued by the Illinois EPA (IEPA), which allows a Woodstock sewage plant to discharge ammonia into the Kishwaukee River. Environmentalists say ammonia levels are more than double the IEPA's standards. Sources: Mitch Martin, *Chicago Tribune*, 6/25/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 6/30/98

Louisiana Water Program Threatened: A court-appointed expert is recommending that a federal judge order the USEPA to enforce "more stringent" water quality standards for 255 polluted river segments, lakes and waterways in Louisiana. If the judge follows the recommendation, the EPA for the first time would be compelled to intervene because a state regulatory agency failed in its water-protection duties, EPA Region VI spokesman David Bary said. Eric Huber, attorney for *Earthjustice Legal Defense Fund* said, "This is tantamount to calling in the National Guard." The EPA, however, has argued it has no responsibility to intervene. Louisiana environmental groups in 1996 sued the EPA in U.S. District Court in New Orleans, claiming the agency failed to ensure that Louisiana's Dept. of Environmental Quality (DEQ) enforced the *Clean Water Act* provisions. The law requires states to set pollution limits for all waterways that fall beneath quality standards, but the DEQ has limits for only 17 waterways, according to the *Sierra Club*. DEQ Secretary Dale Givens said the agency is working toward compliance and has secured the state legislature's approval to hire

37 employees to set pollution limits. Sources: *Baton Rouge Advocate*, 6/18/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 6/19/98

Mississippi Water Quality Study: Mississippi officials are "plowing ahead" with a statewide water-quality study "despite mixed signals from the federal government on what ought to be done." The Dept. of Environmental Quality (DEQ) has launched a study to determine the amount of pollution, or total maximum daily loads, that each waterway can support. The *Earthjustice Legal Defense Fund* in 1/98 sued the USEPA, seeking to force the agency to do the study itself or force Mississippi to do so. DEQ Executive Director Jimmy Palmer said the agency has begun to assess Gulf Coast waterways, but "he said the work is complicated by the federal agency's failure to provide the states with a blueprint to follow" in determining the amount of pollution allowed in each stream. EPA regional offices "have taken some different, contradictory approaches toward states in their regions," he said. The DEQ plans to study 10 watersheds over a 12-13 yr. period. Source: Jack Ellicott, *AP/Biloxi Sun-Herald*, 7/13/98 and National Journal's GREENWIRE, *The Environmental News Daily*, 7/17/98

Mississippi/Missouri Confluence Acquired: The Missouri Dept. of Conservation has sealed a deal to buy more than 4,300 acres of undeveloped land at the confluence of the Missouri and Mississippi rivers in St. Louis County -- the largest tract of green space remaining in the metropolitan region. This tract of land was formerly farmed, but received significant damage during the Flood of 1993. Acquisition by Missouri will ensure that such damage does not occur during another great flood, while restoring this rich floodplain to a productive area for fish and wildlife management. Sources: Tom Uhlenbrock, *St. Louis Post-Dispatch*, 6/18/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 6/19/98

Missouri Lead Mining: The federal government will allow *Doe Run Co.* to prospect for lead in the Mark Twain National Forest in southeast Missouri if the company agrees to (1) waive its absolute right to mine if minerals are found and (2) prevent environmental

damage. Missouri Attorney General Jay Nixon (D) and state officials in Arkansas have argued that if mining is ruled out because of environmental concerns, taxpayers could be forced to pay compensation to *Doe Run*. Nixon also is demanding a full environmental impact statement before drilling can begin in the Ozark Mountains' "fragile" watersheds. The *Sierra Club* "will settle for nothing less" than the denial of any prospecting rights in the region. Company officials said they were continuing to negotiate with federal officials, but they declined to provide further details. Sources: Tom Uhlenbrock, *St. Louis Post-Dispatch*, 6/18/98; Michael Mansur, *Kansas City Star*, 6/17/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 6/22/98

Montana Gold Mine: Montana's Blackfoot River has become "a battle-ground" between environmentalists and a company that wants to build a "huge" open pit cyanide gold mine near the river's banks. *Canyon Resources Corp.* of Colorado "says it has designed a mine that won't degrade the environment." The 8 mi.² *McDonald Gold Mine* could generate nearly \$5 million a year in taxes and state land trust royalties, much of which would go to the *Montana College of Mineral Science and Technology*. But cyanide mining has a "sullied record." Geoff Smith, a staff scientist with the *Clark Fork-Pend Oreille Coalition*, a conservation group working to preserve the Blackfoot's watershed said, "No major gold mine that used cyanide has been able to contain it. The river is in grave danger of being changed forever, all for the love of gold." Environmentalists "fear toxic leaks will poison the river" that served as the "breathtaking backdrop for the Norman Maclean story and hit movie '*A River Runs Through It*'". Mindful of the mining dispute, the DC-based *American Rivers* this year named the Blackfoot as one of the nation's ten most endangered rivers. State and federal agencies are expected to decide whether the mine can go forward sometime next year, following an environmental impact statement. However, state environmental regulators have taken the "rare step" of shutting down the environmental

review because *Canyon Resources Corp.* has been unable to pay for the study. The Dept. of Environmental Quality on 7/2/98 issued a "stop-work order" to the analysts performing the study, until *Canyon Resources* pays the \$163,723 bill due on 7/1/98. The company was also 25 days late on a 6/23 payment for the EIS and has been seeking a partner in its venture since last year. The delinquencies have "raised questions about the financial stability" of the company and the future of the proposed *McDonald Gold Mine*. Environmentalists say the company may not be financially able to operate a sound mine. *Canyon Resources*'s Cheryl Martin said, "It's a very difficult time in the mining industry right now. We're having a little cash-flow problem". The *Montana Land Board*, comprised of the governor and four other elected officials, has veto power over the project. Sources: John Ritter, *USA Today*, 5/29/98; Charles Johnson, *Missoula Missoulan*, 7/7/98 and National Journal's GREENWIRE, *The Environmental News Daily*, 5/29 and 7/9/98

North Carolina Herbicide Spraying: After months of negotiations with environmental groups, *Duke Power Co.* and three other North Carolina based power companies have agreed to let customers refuse the spraying of herbicide on their property. The utilities also said they plan to include inserts about herbicide use in customer bills once or twice a year through 2001. Sources: Bruce Henderson, *Charlotte Observer*, 6/11/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 6/16/98

North Carolina *Pfiesteria* Plan: In his first major policy announcement since recently taking office, North Carolina Public Health Director Dennis McBride said he will ban fishing, swimming and boating on stretches of waterways when 20% of one species exhibit sores or strange behavior associated with the microbe *Pfiesteria piscicida*. McBride's plans "stand in sharp contrast" to past practices by state officials who only posted warnings during fish kills. Sources: Clabby/Shiffer, *Raleigh News & Observer*, 6/9/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 6/11/98

North Dakota Chemical Disposal: North Dakota officials have kicked off their "Project Safe Send" campaign in which state workers will pick up unused and banned farm chemicals for free and ship them out of state. Sources: *USA Today*, 7/15/98 and National Journal's GREENWIRE, *The Environmental News Daily*, 7/16/98

Personal Watercraft Bans: Personal watercraft will be banned on approximately 200 miles of the St. Croix River beginning in 8/98, according to Anthony Anderson, superintendent of the St. Croix National Scenic Riverway. The National Park Service's (NPS) recent proposals to ban jet-propulsion personal watercraft (PWCs) in several parks and

recreation areas is "intensifying [the] aquatic culture clash between jet skiers, traditional boaters and shoreline spectators". Responding to complaints about pollution and noise from the PWCs,



manufacturers are unveiling quieter, fuel-injected models. But at the same time, Jeff Hoedt of the *National Association of State Boating Law Administrators* predicts that states may begin to crack down on, or prohibit the PWCs in more areas. Washington state's ban on the watercraft in the San Juan Islands, which was upheld in early July by the state Supreme Court, "could be the big opener for more local bans," he said. In Lake Tahoe, officials are "shifting direction" in their effort to limit pollution from PWCs. The Tahoe Regional Planning Agency intends to scrap its proposed ban on two-cycle engines and replace it in 12/98 with "tough" regulations similar to ones in California that are designed to limit emissions. Sources: Laura Bly, *USA Today*, 7/16/98; *AP/Las Vegas Sun*, 7/12/98; *AP/Minneapolis Star-Tribune*, 6/10/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 6/11 and 7/16/98

Pigeon River Study: Tests conducted in early July by scientists monitoring the Pigeon River in Tennessee showed increases in the numbers of the river's

aquatic species. The findings come seven months after the USEPA issued *Champion International* a new permit requiring the company's Canton, NC, paper mill to reduce its discharge into the river by 50% by 2001. Sources: *AP/Nashville Tennessean*, 7/10/98 and National Journal's GREENWIRE, *The Environmental News Daily*, 7/16/98

Republican River Suit: In the latest move of a "decades-long dispute," the state of Kansas on 5/26/98 sued the state of Nebraska in the U.S. Supreme Court over water rights to the Republican River. Nebraska, Colorado and Kansas in 1943 signed a pact dictating how much water each state could use from the river. But Kansas claims Nebraska has been annually siphoning off nearly 10 billion more gallons than allowed under the compact. The depletion, "Kansas contends, was caused by indiscriminate drilling of water wells" in Nebraska. Kansas Attorney General Carla Stovall says the practice has escalated as many Nebraska farmers hope to be grandfathered in under a possible settlement between the states. Sources: *AP/Las Vegas Sun*, 4/26/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 5/28/98

Susquehanna River Fish Passage: "A record number of spawning American shad returned" to the Susquehanna River in Maryland last year, aided by a \$12 million system of fish elevators, lifts, hoppers and traps to move the herring around dams. The number of fish passing the Conowingo hydroelectric dam in 1997 rocketed almost 70% over 1995's count. Dams along the shad's migration route to spawning grounds in New York had caused the population to decline for years. But last year, for the first time since shad recovery efforts began seven years ago, there were more wild shad than hatchery-reared shad in the Susquehanna, according to Scott Carney, a biologist for the Pennsylvania Fish and Boat Commission. Meanwhile, a committee advising the *Atlantic States Marine Fisheries Commission* has proposed closing the Atlantic Ocean shad fishery along the East Coast from South Carolina to New Jersey over the next five years. Sources:

Cheryl Lyn Dybas, *Washington Post*, 6/15/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 6/15/98

Tennessee's Urban Growth Plan: Tennessee communities that want to "cushion" urban growth have been given "better tools" in the form of growth planning regulations recently approved by Gov. Don Sundquist (R). The new program requires that a panel of planners, government leaders and citizens be set up by 9/1 to devise growth boundaries for cities and counties by 1/00. Cities and counties with overlapping boundaries will devise "20-year perspectives" on growth, with adjustments made every three years. Goodlettsville, TN, city planner Bill Terry said, "This bill essentially says that counties and cities are to consider the issue of urban sprawl in their planning. They need to look at and address the impact of urban growth on agricultural land, on forest land and on communities". Sources: Renee Elder, *Nashville Tennessean*, 6/4/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 6/5/98

Texas Local Water Protection Zones Banned: "In a ruling that could slam the door on efforts to challenge or circumvent" Austin, TX's strict water-quality regulations, a state district judge recently struck down a law allowing large landowners to avoid city rules by developing their own water protection plans. Judge Paul Davis ruled that a 1995 state law allowing independent "water-quality protection zones" was unconstitutional. The city of Austin had sued the owners of 10 such "protection zones" on the edge of the city in a bid to abolish the law. Austin attorney Karl Bayer said, "This litigation has taken on statewide significance and has become very important to all cities and municipalities." Austin Mayor Kirk Watson said the decision reaffirms the right of Austin residents "to plan for their future ... both economically and environmentally." He said that the city will begin to enforce water-quality regulations in the former protection zones, despite the threat of appeal. Sources: Scott Greenberger, *Austin American-Statesman*, 6/18/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 6/24/98

Virginia Pollution Enforcement Policy: Companies that pollute Virginia waterways will no longer be able to spend money on environmental projects in lieu of some fines, according to a new state environmental policy announced on 5/14/98 by VA Dept. of Environmental Quality (DEQ) Director Dennis Treacy. The change "raises troubling questions for a handful of planned conservation projects." DEQ staff had planned to present four projects for approval, "but withdrew three when Treacy decided to study the program." Officials said the terms of existing projects are being reviewed. Under the new policy, the DEQ would determine a penalty and the polluter would pay at least 25% as a fine with the rest being used for environmental restoration projects. Another new provision specifies that projects must be built near the point of the original violation. Treacy said that he wants *Virginia's Supplemental Environmental Project* program, which was created by the state legislature last year, to be used more consistently across the state. Sources: Rex Springston, *Richmond Times-Dispatch*, 7/15/98 and National Journal's GREENWIRE, *The Environmental News Daily*, 7/15/98

West Virginia River Pollution: "Hundreds of West Virginia's rivers, streams and lakes are polluted beyond legal limits," according to a list of polluted waterways recently released by the state Division of Environmental Protection (DEP). Acidic drainage from coal mines is the main source of the pollution, according to the DEP. Source: Ken Ward, *Charleston (WV) Gazette*, 6/18/98; .

West Virginia Mining Permit Blocked: The USEPA has stopped West Virginia from issuing a water pollution permit for a strip mining project in what "may signal the beginning of increased federal focus on mine permits." The action marks the feds' first formal objection of a new West Virginia mining law that allows firms to bury watersheds of up to 480 acres before they must create new water bodies or pay the state to do so. Under the new law, companies were to pay up to \$225,000/acre of stream buried after 480 acres, and the money, which had formerly gone to water projects, would be channeled into the state's general fund. Industry officials and some state lawmakers say the

law would help West Virginia compete for mining projects with neighboring Kentucky, which also uses 480 acres as a starting point for compensation. However, EPA Region III Administrator Michael McCabe has told Gov. Cecil Underwood (R) that the law could lead the agency to rescind the state's authority to issue permits. *Independence Coal Co.*, a subsidiary of *Massey Coal Services*, now "must prove" that valley fills and sedimentation ponds affecting watersheds greater than 200 acres cannot be avoided before the EPA lifts its block on the firm's permit. Meanwhile, the chief of the state Division of Environmental Protection's mine cleanup department has been relieved of his duties there. Leonard Womble has been "under fire" since May, when it was revealed that the former mine operator was on the U.S. Office of Surface Mining's "permit block" list for abandoning a coal mine in Virginia. Also because of his coal industry ties, West Virginia Division of Environmental Protection Director Michael Miano "must distance himself" from the agency's water-quality program, the USEPA has concluded. EPA Region III officials in June determined that Miano "has too much authority" over the DEP's Office of Water Resources. The "long-time coal industry official" has been sued by a coalition of environmental groups who assert that his former business roles bar him from serving as director of DEP. Under the federal *Clean Water Act*, no one who has worked for a regulated industry within the past two years can oversee state water-quality programs. The state says that the prohibition concerning former industry officials does not apply to Miano because a different individual within the DEP has "exclusive authority" over water permits. But EPA attorney William Early rejected the position, saying that it "ignores the underlying, real chain of command." Early recommended that the state transfer authority of several programmatic and personnel tasks related to water quality to someone other than Miano. But Miano said on 7/14 that the DEP does not intend to take any further action to distance him from water program issues. Enviro's had assailed the state's "mountaintop removal" strip mines for leveling the state's

mountainous terrain, filling in valleys, polluting streams and leaving some areas more prone to flooding. Sources: Steve Myers, *Charleston [WV] Daily Mail*, 6/4/98; Ken Ward, *Charleston [WV] Gazette*, 6/4/98; Source: Ken Ward, *Charleston [WV] Gazette*, 7/15/98 and National Journal's *GREENWIRE, The Environmental News Daily*, 7/17/98 and 6/5/98

Wisconsin Environmental Rulings: The Wisconsin Supreme Court on 6/19/98 ruled that people and businesses that dumped hazardous waste before state law made it illegal can be fined and forced to pay cleanup costs. The Court also ruled that Wisconsin residents can sue to protect waterways when the state Dept. of Natural Resources "refuses" to do so. The unanimous decision was reached on 7/2/98 Sources: Cary Segall, *Wisconsin State Journal*, 6/20 and 7/3/98; and National Journal's *GREENWIRE, The Environmental News Daily*, 6/23 and 7/7/98

Yellowstone and Clark Fork River Pollution: The state of Montana has ordered the city of Billings to conduct a multi-million dollar groundwater cleanup project at the site of a former landfill, after water samples from the Yellowstone River exceeded state water quality standards for nutrients and metals. Meanwhile, officials representing Montana and *Atlantic Richfield Co.* have reached a \$215 million settlement over mining pollution and damage to the Clark Fork River, marking the end to "the biggest civil case ever brought by the state". Sources: Ed Kemmick, *Billings Gazette*, 6/26/98; John Stucke, *Montana Standard*, 6/21/98; and National Journal's *GREENWIRE, The Environmental News Daily*, 6/9 and 6/30/98

Yellowstone Bioprospecting: The issue of bioprospecting for microbial bacteria and algae from geysers in Yellowstone National Park is pitting the National Park Service (NPS), private firms and conservationists in a debate over preservation and profits. Possible health and technological benefits of bacteria and algae in Yellowstone's hot springs led to a historic agreement between the biotech firm *Diversa Corp.* and the NPS last August. But a coalition of environmental

and conservation groups on 3/5/98 filed suit to block the deal, saying it circumvented the park's ban on the commercial use of its creatures. "Equally vexing is the question of profit sharing," as other critics question why money "shouldn't be returned to the cash-trapped park." But *Diversa* contends the public already stands to benefit from the arrangement in the form of greater park revenues and technological advances leading to improved public health and a decreased reliance on toxic chemicals. The outcome of the debate could serve as a precedent for other deals, because "more than a dozen firms are said to be considering a similar agreement with the Park Service". Sources: Joby Warrick, *Washington Post*, 7/12/98 and National Journal's *GREENWIRE, The Environmental News Daily*, 7/13/98

Yellowstone Mine Suit Settled: Environmentalists and the owner of the *New World Mine* property in Montana have agreed to settle the lawsuit that led the Clinton Administration to agree to a buyout of the land near Yellowstone National Park. The suit by the *Greater Yellowstone Coalition* over water quality issues related to *Crown Butte Mine's* operations gave environmentalists "legal leverage" against the Toronto-based firm as they protested the proposed *New World Mine*. The company "consequently buckled" and agreed to give up its mining bid and land in exchange for cash from the federal government. As part of that \$65 million deal, the groups represented by the *Earthjustice Legal Defense Fund* had pledged to settle the suit. In a consent decree filed on 6/25 in U.S. District Court in Billings, MT, the firm agreed to spend \$22.5 million to clean up mine waste near the northeastern corner of Yellowstone, making the project the largest mine reclamation effort in the region. Sources: Michael Milstein, *Billings Gazette*, 6/26/98; and National Journal's *GREENWIRE, The Environmental News Daily*, 6/29/98

Western Water Issues

A "massive" new study of water supplies in the Western U.S. recommends that the federal government focus on restoring degraded watersheds and encouraging water transfers from farms to cities to address rapid population

growth. The study by the *Western Water Policy Review Advisory Commission*, mandated by Congress in 1992, "embraced the idea — still heretical in many parts of the West" -- that the needs of agricultural users should give way to natural resource protection and growing cities. Agriculture's consumption of western water has dropped from 86% in 1960 to 78% today, and is expected to decline further as the region adds an estimated 28 million people by 2025, according to the study.

The report, the "most comprehensive study of western water issues undertaken since 1973," recommends that governments charge full-market value for water from any new irrigation projects. To "break a gridlock" among the myriad agencies that control water policy, the study says new policies should be based on watershed, rather than political or bureaucratic boundaries. However, because any reallocation of water "inevitably involves enormous political conflict," there is doubt whether the study can lead to change.

Meanwhile, a group of private investors is seeking water rights and permits to build a 202,000 acre-ft. reservoir on the Green River in Wyoming, in hopes of leasing Wyoming's unused water to fast growing Nevada and other states in the Colorado River Basin. The *Colorado River Compact* allocates 1.2 million acre-ft. of water from the Colorado River watershed to Wyoming. But the state uses about only half of its allocation and sends the rest downstream. Coyne Tibbets, president of the investor group *New Water Inc.* said, "We are a headwater state. Once it gets away from us, it's gone."

The river compact also bars states from selling or leasing water to other states, although the concept of water marketing has been discussed by Western governors. Despite the prohibition, Wyoming state officials are evaluating the technical aspects of the proposed project. "You never know when conditions may change," said John Barnes, head of the Wyoming Surface Water and Engineering Division.

Also in what "could be one of the

biggest water fights the West has ever seen," a New Mexico environmental group is threatening to try to dismantle four multi-state river compacts in an effort to protect rare species. The Santa Fe-based *Forest Guardians* said in early May that it will file a lawsuit challenging water-rights agreements involving the Rio Grande, upper Colorado and Pecos rivers and Costilla Creek. The group wants to help fish and wildlife gain stronger legal rights to scarce water that is now allocated primarily to the West's cities and farms.

At issue is whether the federal government properly analyzed water allocations for their potential harm to the environment. John Talberth of the *Forest Guardians* said the river commissions have never conducted environmental impact studies on their actions. "Right now, it's a good old boy network of irrigators and industry users who play God and don't think the environmental laws apply to them", he said. Talberth also said river managers have never formally consulted with the U.S. Fish and Wildlife Service concerning basin-wide water management plans, nor have they designed water-flow agreements to dilute pollution from cities, oil and gas wells, mines or farms.

Because the decades-old river compacts "hold Solomonic power" over water for Arizona, Colorado, New Mexico, Texas, Utah and Wyoming, the affected states are expected to "send their top lawyers to mount a defense". Utah Assistant Attorney General Mike Qualey said the water compacts among the states cannot be altered without agreement from all parties. And he noted that the agreements merely divide water among states and do not specify how the water should be used -- "a potential hangup for any litigation" because it could force environmentalists to sue over dozens of specific water projects.

Sources: Tom Kenworthy, *Washington Post*, 6/25/98; Elizabeth Davis, *AP/Salt Lake Tribune*, 6/27; *AP/Albuquerque Journal*, 5/6/98; Ian Hoffman, *Albuquerque Journal*, 5/6/98; *AP/Tucson Arizona Daily Star*, 5/7/98; and *National Journal's GREENWIRE, The Environmental News Daily*, 5/7, 6/25, and 6/30/98

Ag Waste Update

Forty percent of the nation's waters remain too polluted for fishing, swimming and other recreation, according to a national water quality survey released in May by the USEPA. The biennial report, which is based on 1994 and 1995 surveys of 19% of the nation's rivers, 40% of lakes and 72% of estuaries, found agricultural runoff to be the largest source of pollution for rivers and lakes. Industrial discharges were found to be the leading source of pollution in estuaries. The report is available at <http://www.epa.gov/305b/>.

The **Clinton Administration** has begun to focus on the issue of agricultural waste by having the USEPA work with states to develop strict pollution discharge regulations for large farms by 2005. Also USEPA and National Oceanic and Atmospheric Administration grants will be used to pay for "scientific trip wires" set up in the waterways of several states to detect possible outbreaks of *Pfiesteria piscicida*, the toxic microbe thought to be fueled by nutrient runoff from farms and cities. Maryland has been awarded \$560,000, which complements the \$1 million the state has already allocated for testing for the toxic microbe. Other states receiving grants include Delaware, Florida, North Carolina and Virginia. Meanwhile, U.S. Senators Barbara Mikulski (D/MD), Paul Sarbanes (D/MD) and Lauch Faircloth (R/NC) have introduced legislation that would authorize \$15 million for the U.S. Army Corps of Engineers to study the microbe and develop plans to reduce water pollution. The funds would be in addition to \$13.5 million approved last fall in the wake of Maryland fish kills.

Meanwhile, the **Roman Catholic Church in the U.S.** has deemed the threat of industrial farms a "major religious and moral issue." Citing the impact of these farms on the environment and rural communities, bishops in Illinois, Ohio, Kansas and North Dakota are calling on states to take steps to limit corporate farming. The Church's stance is based on the Vatican's policies concerning agrarian reform, which has been given new emphasis by Pope John Paul II. Bishop Raymond Burke of the *National Catholic Rural Life Conference* said, "Large-scale animal confinement ... is geared at ever-greater pro-

duction and profit for a few at a lethal cost to the general population through the destruction of the environment".

Claiming that "the growth of massive chicken and hog operations are jeopardizing rivers that people depend on for drinking and recreation," the *Sierra Club* in early June called for a freeze on new permits or expansions of corporate livestock operations until the federal government sets up new water quality rules and enforces those already in place.

Meanwhile, the Colorado Supreme Court has upheld a ballot initiative that would prevent the separate regulation of hog farms from other livestock, a measure backed by the farm industry to counteract another ballot proposal to strictly regulate large hog farms. Voters are expected to be able to consider both measures this fall.

Sawtooth Farms in early July proposed a \$1 billion project to raise 250,000 hogs on state land in southwestern Idaho's high desert. Supporters took "pains" to emphasize the environmental aspects of their plan that differ from other "huge" hog farms.

Inspections of 271 Indiana livestock farms found that 73% were in compliance with environmental regulations. Officials said it is too soon to tell if the numbers are representative of the state's 3,800 farms. "Stepped-up" inspections will continue for the next 2-3 yrs., with another 200 farms targeted in the next phase.

The Kansas Dept. of Health and Environment (KDHE) in June approved two permits that allow *Murphy Family Farms*, the nation's largest hog producer, to set up operations in the state. The company has pledged that it "will exceed" state pollution requirements. The action comes shortly after the KDHE held a public hearing to get input on a law passed this year regulating the industry. Meanwhile, Kansas gubernatorial candidate David Miller, who is challenging Gov. Bill Graves for the Republican nomination, on 7/7 kicked off a two-day campaign trip by focusing attention on corporate hog farms. Miller said residents should have control over

whether such operations are allowed in their communities.

Nebraska, which has "perhaps the nation's toughest" factory farm laws, forbids any corporation from engaging in farming.

USEPA inspectors "paid surprise visits" on 10 North Carolina hog farms in May. Nine of the farms, targeted because of their history of problems, were found to be in compliance with clean water rules. Meanwhile, in a move that "could slow the growth of North Carolina's booming pork industry," the state Division of Water Quality is considering a "controversial" plan to limit the size of a Bladen County, NC, hog slaughterhouse. Already the world's largest, the plant operated by Virginia-based *Smithfield Foods* has requested a new permit that would allow it to increase its wastewater discharge into the Cape Fear River by 50%, to 4.5 million gal/day. The new permit under consideration would freeze the plant's capacity at its current level of 24,000 hogs and would not let it discharge any additional wastewater into the river.

In Sampson County North Carolina, "the heart of the hog belt" waste lagoons at concentrated hog farms have led to a 100% increase in the amount ammonia rain falling in the area over the past decade, according to a study by *North Carolina State University*. The study shows that the increase began in about 1985, correlating with the growth of the hog industry, according to researcher Viney Aneja. By 1996 the ammonia levels had more than doubled. The North Carolina Division of Air Quality reports that hog farms collectively discharge at least 186 tons of ammonia into the air every day, and that ammonia triggers algae blooms and fish kills. U.S. Agriculture Dept. re-

search indicates that much of the ammonia wafting from farms is used by plant and forest systems. But the *Environmental Defense Fund* has urged state regulators to limit ammonia gases from hog farms. Meanwhile, the state House in early July approved a plan to study new technology to phase out waste lagoons. A *Raleigh News & Observer* editorial says the *North Carolina State University* research "strengthens the case for proceeding cautiously with hog farm expansion, guided by an interest in safeguarding human and environmental health -- not just profit".

The *Ohio Environmental Review Appeal Commission* has agreed to hear two appeals in 1/99 against the *Buckeye Egg Farm* in Licking. The *Licking County Citizens for a Safe Environment* and the Hartford Township trustees are concerned that the addition of 4.5 million birds would harm soil, water and air quality in the area northeast of Columbus. "Stung by criticism" surrounding the *Buckeye* farm expansion, the Ohio EPA in June said it will begin informing the public when large-scale livestock farms are planned in their communities. Meanwhile, the Ohio Environmental Protection Agency has told *Buckeye* to "temporarily shelve" plans to raise 18 million chickens at several facilities near Marion, but it gave the state's largest egg producer permission to expand other facilities and build two new ones. The decision "appears to represent a shift in policy by Gov. George Voinovich's (R) Administration.

Oklahoma Gov. Frank Keating (R) signed into law in May guidelines for regulating the poultry industry, making the state one of the first in the country to set such laws. The measure requires all farmers to register annually with the state Agriculture Dept. and before beginning construction on new operations. All commercial applications of



nutrient-rich waste must be certified by the state, and state agriculture officials will have the authority to spot-check all farms and ban the application of waste in some areas. All waste handlers and poultry farmers will be required to attend courses on handling poultry waste. Watersheds at risk of high phosphorous levels will be required to have their soil tested annually, while other areas will require the testing every three years. Opponents of the law say it gives an unfair advantage in the industry to other states without such strict regulations. Then on June 10 Gov. Keating signed what he called "the strictest hog regulation bill in the U.S.," which would lift a 3/98 moratorium on construction and expansion of hog farms, but impose "severe" measures to keep new facilities away from neighbors. Under the bill, farmers will have to install monitoring wells around all future hog-waste lagoons and around existing lagoons by 9/99. And "for the first time," hog operations will have to pay fees to support government regulation of the industry.

A South Dakota ballot initiative on corporate farms has become an issue in the governor's race, with challenger Bernie Hunhoff (D) favoring restrictions and incumbent Gov. William Janklow (R) defending big hog farms as "good corporate citizens."

A Tennessee strategy drafted by a group of regulators, environmentalists, and agricultural representatives will "buttress long standing state and federal environmental laws". The plan outlines regulations and permits for swine, poultry, beef, and dairy operations. According to a *Memphis Commercial Appeal* editorial, "The new state plan offers the prospect of fairly balancing environmental, agricultural and consumer interests... But much will depend on whether the state can enforce its informal rules without allowing influential special interests to weaken them".

In Wisconsin, the Dept. of Natural Resources is working with the Dept. of Agriculture, Trade and Consumer Protection on new rules addressing non-point pollution from farms.

In Wyoming new state and county

rules could make expansion of the *Ponderosa Ridge* hog farm "impossible." The new rules will look at operations and financial liability, expanding the original focus from the quality of holding ponds and facilities. Water Quality Administrator Gary Beech said, "The rules regulate animal waste from the cradle to grave from the buildings to where they apply it on the land"

Finally, researchers at *Northwest Missouri State University* have developed a way to mix hog waste with "switch grass" and turn it into "stink-free, innocent-looking pellets" that can be burned. The school has been experimenting with burning hog manure since last fall and has cut its use of oil and natural gas by 13%.

Sources: EPA release, 5/22/98; *AP/Casper (WY) Star-Tribune*, 6/8/98; Tom McAvoy, *Pueblo (CO) Chieftain*, 7/1/98; Tom Charlier, *Memphis Commercial Appeal*, 6/24/98; Mike Ivy, *Madison (WI) Capital Times*, 6/16/98; Kyle Niederpruem, *Indianapolis Star-News*, 6/23/98; *Baltimore Sun*, 6/30 and 7/2/98; *USA Today*, 5/21/98; Bob Williams, *Raleigh News & Observer*, 5/28/98; Dirk Johnson, *New York Times*, 6/24/98; George Anthan, *Des Moines Register/Detroit News*, 6/21/98; *AP/Durham Herald-Sun*, 6/18/98; Jean Hay, *Wichita Eagle*, 6/19/98; Amy Lignitz, *AP/Wichita Eagle*, 6/12/98; *AP/St. Louis Post-Dispatch*, 6/23/98; Paul Souhrada, *AP/Cleveland Plain Dealer*, 6/22/98; Brian Williams, *Columbus Dispatch*, 6/16/98; Glenn Williams, *Columbus Dispatch*, 7/7/98; Vinod Goel, *Cleveland Plain Dealer*, 7/8/98; *AP/Charlotte Observer*, 7/6 and 7/9/98; *Raleigh News & Observer* 7/8/98; *AP/Idaho Falls Post Register*, 7/8/98; Roxanna Hegeman, *AP/Wichita Eagle*, 7/8/98; and *National Journal's GREENWIRE, The Environmental News Daily*, 5/26, 5/29, 6/10, 6/12, 6/24, 7/2 and 7/10/98

Climate Change

The first six months of 1998, according to a report released in May by British experts, were the warmest first half of a year globally since reliable records have been recorded. Data analyzed by the UK Meteorological Office and the *University of East*

Anglia showed that the average global temperature between 1/98 and 6/98 was 0.6 degrees higher than the 1961-1990 average. And each month this year has been the warmest since the records were started in 1860. The new information "not only extended the record breaking pattern, [but] did so by a degree that scientists described as unprecedented." "Moreover," scientists said that global warming appears to be exacerbating the effects of El Nino, which have included droughts and wildfires in some places and heavy rains in others.



Although the El Nino weather phenomenon has been a "major" factor in the warming trend, and other causes are not fully understood, "there is increasing evidence that human activities, through the release of carbon dioxide from burning fossil fuels, [also] play a part,"

the Meteorological Office said. Scientist Thomas Karl of the *National Climatic Data Center* in Asheville, NC, who headed the analysis for the U.S., called the temperature jump "really rather spectacular." Climate scientist Kevin Trenberth of the *National Center for Atmospheric Research* in Boulder, CO, who did not participate in the study, said the trend is even more remarkable because it is well above an average that included the effects of a global warming of about 1 degree over the preceding century.

Information presented in June by the *National Oceanic and Atmospheric Administration (NOAA)* indicates that "major" El Nino weather events have become more frequent and severe over the past two decades. NOAA's data shows that during the 1997-98 El Nino episode, temperatures across the U.S. averaged 2.2 degrees above normal, with the Northeast and Great Lakes regions averaging 4.4 degrees and 6.4 above normal, respectively. Maryland, Virginia and three other states recorded their wettest five months in more than 100 years. NOAA Administrator D. James Baker said, "Whether these two things are causally linked is a research

question. But it stands to reason that if you put more energy in the (weather) system, it would change the way the system works," he said.

"Researchers studying the possible regional impact of global warming almost uniformly predict stormier weather across Appalachia and the Ohio Valley during the 21st Century, resulting in more flooding, erosion and landslides." Based on government estimates, rising concentrations of greenhouse gases in the atmosphere will boost average global temperatures 2-6 °F by 2100. "Most" scientists predict this will cause increased rainfall across Appalachia and the Midwest. Although the wetter climate could tend to moderate temperature increases in the region, *University of Miami, OH*, researcher Orie Loucks warns the rainfall could upset the area's infrastructure, such as sludge ponds and containment dams in the coal-intensive Ohio Valley. *University of Cincinnati* geologist Tom Lowell said, "We'll be more susceptible to flooding problems in Appalachia and the Ohio Valley, which will induce mass movements such as debris flows and landslides along steep hillsides." However, some computer models suggest a warmer climate would increase evaporation rates and cause long-term declines in the water levels of the region's lakes, rivers and streams.

Meanwhile, a team of *University of Colorado* researchers has found that global warming is causing glaciers worldwide to melt more quickly than expected. The study, presented at a 5/26 meeting of the *American Geophysical Union* in Boston, is based on data collected on glaciers worldwide during the past century. Over the past 100 years, the largest glacier on Mt. Kenya in Africa has shrunk by 92%, while glaciers in Russia's Caucasus Mountains have shrunk by 50%. At the current melting rate, the researchers say all of the glaciers in Montana's Glacier National Park will disappear within 70 yrs.

A study published in a recent issue of the journal *Science* suggests that the west Antarctic ice sheet collapsed into the sea hundreds of thousands of years ago and could be doing so again today, possibly in response to

global warming. If that occurred, sea levels could rise by a "catastrophic" 13-20 ft., the *New York Times* reports. The article by science writer William Stevens is accompanied by maps and photos showing the portions of Manhattan, Florida and the Gulf of Mexico coast that would be inundated in such an event. However, Stevens notes that "few if any experts believe that the ice sheet is likely to collapse in anything less than a few centuries," and no one is sure whether the trend is caused by natural or human forces. Scientists previously had believed that the west Antarctic ice sheet was stable throughout its 8-10 million year history. But researchers at *Uppsala University* in Sweden and the *California Institute of Technology*, led by Reed Scherer, found evidence of tiny marine algae on land beneath the ice sheet, suggesting that the ice sheet may have disappeared during an interglacial period in the past, possibly similar to the one now occurring. Michael Oppenheimer, a scientist with the *Environmental Defense Fund*, said it could take 500-700 years for the ice sheet to disintegrate fully at current rates of global warming. But that outcome could become inevitable as early as the end of the next century, he said.

Finally, a new study in the 7/15/98 issue of *Geophysical Research Letters* suggests that past work has "slightly" overstated the role of carbon dioxide in global climate change, while understating that of some other chemicals. The actual contribution of carbon dioxide to global warming is about 15% less than that estimated by the *Intergovernmental Panel on Climate Change* says the report. But study, leader Gunnar Myhre of the *University of Oslo*, Norway, concluded that other chemicals, including methane and nitrous oxide, have been underestimated. Jerry Mahlman, director of the *Geophysical Fluid Dynamics Lab* at *Princeton University*, said the finding "isn't a stunner, but it's an important contribution if it's true." Mahlman said the study would not "substantially reduce" the range of projected global temperature increases; for example, instead of an average increase of 1.5 - 4.5 degrees, it could mean a range of 1.35 - 4.3 degrees, he said.

Source: *Reuters/Baltimore Sun*,

7/8/98; Curt Suplee, *Washington Post*, 6/9/98; David Lore, *Columbus Dispatch*, 6/1/98; Alison Fitzgerald, *AP/Boston Globe/others*, 5/28/98; William Stevens, *New York Times*, 7/7/98; Judy Silber, *Christian Science Monitor*, 7/3/98; Randolph Schmid, *AP/Tulsa World*, 7/11/98 and National Journal's *GREENWIRE*, *The Environmental News Daily*, 5/28, 6/4, 6/8, 6/9, 7/7, 7/8, and 7/14/98

World Environmental Concerns

"Majorities of people in the world's most populous countries want sharper teeth put into laws to protect the environment," according to the "largest-ever" international survey on the subject, released to mark *World Environment Day* (June 5). Majorities in 28 of 30 countries surveyed -- all but Nigeria and Finland -- said environmental laws in their countries "don't go far enough." Asked an open-ended question about the most important problems facing their country, some 40% of urban Chinese and 27% in India cited an environmental issue as the most important or second-most important problem. At least 20% of respondents in Australia, Germany, Japan and the UK also cited the environment as a leading concern.

Prompted to describe their level of concern about the environment, those answering "a great deal" or "a fair amount" totaled more than 75% in most countries. Comparing results with a similar question asked by the *Gallup* polling organization in 15 countries in 1992, the percentage of people expressing "a great deal" of concern was higher this year in 13 of the 15 countries, including the U.S. (39%, up 1 point). In 17 countries, researchers sought opinions on the most effective ways to reduce pollution. In 15 of the 17, "strict laws" were the most favored approach, as opposed to economic incentives, voluntary targets or requirements for public reporting of emissions. Support for economic instruments was highest in France (32%) and the U.S. (31%).

The survey also asked whether, "given scientific uncertainty over climate change," we "should not take major

action until we know more because of the great economic costs involved" or "we should assume the worst and take major action now ... even if there are major costs." Majorities or "near majorities" favored action now in 27 of the 30 countries. Compared to a 1997 survey asking the same question, the percentage of U.S. respondents favoring action has risen from 46% to 51%, while those favoring caution dropped from 46% to 42%. The largest swings toward the "action now" position occurred in Russia, up 46 points to 73%, and China, up 24 points to 56%.

The second annual *International Environmental Monitor* survey was conducted by polling firms in 30 countries, coordinated by Toronto-based *Environics International*. More than 35,000 interviews (at least 1,000 per country) were conducted in 3/98 and 4/98 in Argentina, Australia, Brazil, Canada, Chile, China, Colombia, Finland, France, Germany, Greece, Hungary, India, Indonesia, Italy, Japan, Kazakhstan, Mexico, New Zealand, Nigeria, Poland, Russia, South Africa, South Korea, Spain, Turkey, the UK, U.S., Uruguay and Venezuela. Each national survey is considered accurate within +/- 3%. Together, the nations represent two-thirds of the world's population.

Over the past century, human impacts on the environment have "risen dramatically as the scope and intensity of human activities have increased," according to the second part of the *World Resources 1998-99* biennial report jointly released on June 4 by the DC-based *World Resources Institute*, the *UN Environment Program*, the *UN Development Program* and the *World Bank*.

The new section, released to mark *World Environment Day*, describes trends in such areas as food production, biodiversity and energy use, and also attempts to illuminate the forces driving current changes, as well as policy solutions. Among the worrisome trends, the report says that one-third of the world's population lives in countries that are experiencing water stress, and that water scarcity is likely to worsen in many parts of the world as human population grows and per capita water consump-

tion "reaches new heights." Excessive use of fertilizers and fossil fuels are "contributing to a global glut of nitrogen," threatening terrestrial and aquatic ecosystems. Part one of the report, which was released in May, can be accessed on the Internet at <http://www.wri.org/wri/wr-98-99/>.

Sources: *Environics International* release, 6/4/98; *WRI* release, 6/4/98; and *National Journal's GREENWIRE, The Environmental News Daily*, 6/5/98

Property Rights Poll

The "overwhelming majority" of farmers, ranchers and forest landowners -- 71% -- say their property value has not been reduced by government regulations designed to protect the environment, according to a new nationwide survey. The poll was conducted by J. Dixon Esseks, a professor of public administration at *Northern Illinois University*, on behalf of the *American Farmland Trust* (AFT), a Washington, DC-based conservation group founded in 1980 to stop the loss of productive farmland.

"Designed to probe the opinions of those who own most of the land in the U.S.," the survey consisted of telephone interviews with 1,729 owners of at least 5 acres of farm, ranch, or forest land in 42 states. The margin of error was +/- 3%. Among the other conclusions of the survey:

- A clear majority -- 70-95% depending on the issue -- favor some government role in natural resource conservation instead of leaving it completely to the marketplace;
- 75% reject the idea of compensating landowners whenever regulations lower their property value by a certain percentage; and
- Nearly 60% favor zoning to protect farmland from residential development.

AFT Pres. Ralph Grossi said the polarized debate over property rights obscures the moderate views of most landowners. "Agricultural landowners strongly endorse 'hybrid' programs that combine reasonable regulations with cost-share payments to encourage good land stewardship. It should not be all one or the other", he said. "This survey clearly shows that the interests of America's agricultural

landowners are not served by legislation designed to undercut environmental protection and sensible land use policy," Grossi said.

The report goes on to claim, "In some cases, landowners seem to be willing to accept regulation without any financial remuneration, believing that the benefit to their livelihood or security is compensation enough. Zoning, to protect farmland from development and farmers from conflicts with neighbors, is a good example. When accompanied by the purchase of conservation easements from willing landowners, it makes an unbeatable combination." The full text of the report is available by calling (800) 370-4879 or on AFT's home page at <http://www.farmland.org>.

Source: *AFT* release, 6/10/98; and *Land Letter*, Vol. 17, No. 13

Non-Lethal Caviar Harvest

In an effort to spare the lives of endangered sturgeon without reducing caviar harvests, two competing Russian interests say they have developed a way to take caviar from sturgeon without killing them. Extensive poaching operations in the Caspian Sea and its tributaries has contributed to declines in adult sturgeon populations and has brought into question the future of caviar production.



"Lake Sturgeon"

Ecoresoursy and the *Russian Federal Research Institute of Fisheries and Oceanography* say they have developed a method to harvest the caviar that involves injecting the fish with hormones to cause ovulation. A type of Caesarean section is then performed to remove the eggs and the fish is returned to the water to spawn again. But "the caviar industry isn't exactly rushing toward slaughterless caviar," reports the *Wall Street Journal*. Some caviar firms say they have been disappointed by the caviar's quality. Meanwhile, Russia's caviar factories "aren't gung-ho" with the idea they would have to pay to ship the sturgeons back to the Caspian Sea when outlaws are

most likely to catch the fish next time around anyhow".

Sources: Daniel Pearl, *Wall Street Journal*, 6/30/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 6/30/98

Bighead and Silver Carp Data Wanted

Bighead *Hypophthalmichthys nobilis* and Silver carp *H. molitrix* length and weight measurements are needed from the Mississippi River Basin. If you or your organization is willing to participate in the development of a relative weight condition index (Wr) on these genera, or can provide information relative to other indicated exotic species, please contact: Jeff Finley, U.S. Fish and Wildlife Service, 608 East Cherry, Columbia, MO 65201, (573) 876-1911 ext. 111, jeff_finley@mail.fws.gov

Mussel Poaching May be Costly

A Muscatine, Iowa based claming operation was indicted in late April on 59 counts of unlawful transportation and sale of mussels. Darwin "Butch" Ballenger, his wife, Cheryl Roate-Ballenger, and Harry Schultz - all of Muscatine - were named in the federal indictment, along with two Illinois men and a Wisconsin man. The *Mississippi Valley Shell Co. Inc.* and *Great River Shell Inc.*, both run by the Ballengers, were also indicted.

The indictment alleges that the group illegally took mussels from restricted areas in seven Midwestern states from 1993-97. According to the indictment, several of the defendants illegally harvested mussels from restricted areas, including the Rock River in Illinois, the Otter Tail River in Minnesota, the Muskingum River in Ohio and the Sheyenne River in North Dakota. Documents say the mussels were then purchased by Ballenger's Muscatine operation, which resells the mussel shells internationally - usually to Japanese companies for use in culturing pearls.

The Ballengers, licensed as mussel

buyers in Iowa, also are accused of making false entries on mandatory Iowa reports and other documents. "This is a very serious violation," said Walt Kocal, special agent with the U.S. Fish and Wildlife Service, who said more indictments may follow. Agents raided the Ballenger operation in April, and the U.S. attorney's office in Rock Island, Illinois said the operation made about \$300,000 in illegal mussel sales, and that the defendants face up to 5 yrs. in prison and a fine of \$250,000 for each of the 59 counts. Arraignment was scheduled for May 15 in Davenport, IA.

Source: Geoff Cooper, *The Des Moines Register*, 4/28/98

Invasion of the Asian Swamp Eel

Scientists fear that the Asian swamp eel, recently found in a Florida swamp and in small lakes near Atlanta, "could prey on or crowd out native fish" in the Everglades and along the Atlantic Coast as far north as the Chesapeake Bay. The eel, which "could have been tailored by God to take over the Southeast," thrives in ditches, canals and marshes, and it has the ability to breathe air, so it can move across land to find new waterways. Its resistance to waterborne poisons and its slimy, elusive quality make it difficult to control. Wayne Starnes of the *North Carolina State Museum of Natural Sciences* said, "There's no way to control them...except direct clubbing." The eels may have entered the wild by escaping Florida fish farms that grow them as pets.

Sources: Traci Watson, *USA Today*, 7/6/98 and National Journal's GREENWIRE, *The Environmental News Daily*, 7/6/98

Two Different Approaches to Environmental Education

A coalition of nonprofit, government and private entities is offering a training course "to promote the responsible use of the environment." The *Leave No Trace* program, coordinated by the Lander, WY-based *National Outdoor Leadership School*, is a "distillation" of

the group's "traditional conservation practices." The goal is to teach some of the reported 89% of Americans who use the outdoors various methods to minimize their impacts on the land. The "masters" course lasts 5 days and costs \$650 for participants who are not employees of the U.S. Forest Service (USFS), Bureau of Land Management, National Park Service or U.S. Fish and Wildlife Service. Federal employees receive a discount because of their agencies' financial support of the program. Other partners in the program include the *Sporting Good Manufacturers Assn.*, the *Outdoor Recreation Coalition of America*, 56 retail companies and several state agencies. Promoters hope that the project, which grew out of a program started in the 1970s by USFS personnel in Utah, "will propagate itself" as graduates offer seminars in their own communities.

Meanwhile, about 25 environmentalists in mid June completed the 5th annual *Native Forest Activist Training Week* held in Vermont, where they learned skills to fight the destruction of the world's forests. The goal of the training was to set up "a tree village," where activists could camp in the branches to prevent loggers from cutting, a method rarely used on the East Coast but "common" in the West. There were sessions in banner hanging, civil disobedience, legal strategy and "radical ecology." The group's efforts have earned them the hostility of industry reps. Roberta Borland of the *Vermont Forest Products Association* said "I consider them quite dangerous. They're very extreme, very hostile, very intimidating, ... and not the kind of people I want in my backyard".

Sources: Jeff Tollefson, *Casper (WY) Star-Tribune*, 6/17/98; Jeffrey Krasner, *Wall Street Journal*, (Northeast edition), 6/17/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 6/19/98

National Library for the Environment - Online

The on-line *National Library for the Environment* (<http://www.cnie.org>) sponsored by the *Committee for the National Institute for the Environment* (CNIE) contains seven free and very useful information resources:

- Up-to-date objective, nonpartisan issue reports.
- Environmental Education Programs and Resources.
- Environmental Laws -- local, State, Federal and international.
- An in-depth resource on Population-Environment Linkages.
- A Virtual Library of Ecology and Biodiversity.
- Information on environmental conferences and meetings
- Environmental Careers and Jobs

The library was made possible through donations by *Compaq Computer Corporation*, the *David and Lucile Packard Foundation*, the *United Nations Population Fund*, the *Winslow Foundation*, *AT&T*, and members of the *CNIE Associates Programs*. The Library was recently honored with a *Computerworld Smithsonian* award for innovative use of technology. *Rice University Center for Conservation Biology Network* is a major collaborator, while *Pace University Law School* and several other organizations provide significant on-line resources.

Over 300 Nonpartisan Environmental Reports are produced by the Library of Congress' *Congressional Research Service* (CRS) exclusively for Members of Congress and their staff. Issues addressed include Agriculture & Grazing, Air, Biodiversity, Climate, Energy, Forestry, International Issues, Legislation, Marine, Mining, Natural Resources, Pesticides, Pollution, Population, Public Lands, Regulatory Reform, Stratospheric Ozone, Trade, Taxes & Economics, Transportation, Waste Management, Water Quality and Wetlands. Reports are reviewed for technical soundness, objectivity and nonpartisanship and many are updated monthly. Yet these reports are not available to the American citizens. As the *National Journal* reported, if anyone other than a Member of Congress asked the CRS for copies of the reports the agency writes, the answer would be an emphatic "no." The Library of Congress is not affiliated with the *National Library for the Environment* and does not cooperate in this initiative. However, as products of Congress, CRS reports are not copyrighted and thus CNIE has legally made them freely available to the public at

http://www.cnie.org/nle/crs_main.html

Environmental Education Programs and Resources include:

- *Directory of Higher Education Environmental Programs*.
- *Starfish*: sustainability courses, bibliographic references, innovative teaching techniques.
- Academic Programs in Conservation Biology.
- Community college and high school environmental technology programs.
- Environmental Impact Assessment Training Courses.

Environmental Education Programs and Resources are implemented in collaboration with *Rice University* and include resources developed by CNIE and others. The *Directory of Higher Education Programs* includes over 150 degree-granting, environmental programs -- many of which train K-12 teachers. The Directory was developed by CNIE and Rice University. The resources provided on *Advanced Technology Environmental Education Center (ATEEC)* in Iowa address environmental technology education through curriculum development, professional development and the nation's community college and high school environmental technology programs. Complementing the program-focused resources is *Second Nature's Starfish*, with over 200 syllabi and reading lists for sustainability courses, 1600 bibliographic references for sustainability and 21 innovative teaching techniques. Environmental Education Programs and Resources are available at <http://www.cnie.org/educate.htm>

Population and Environment Linkages contain extensive information and source documents at all levels of complexity in an innovative and simple framework. Areas addressed include: Demographics, Freshwater Resources, Oceans, Land-Use, Coastal Environments, Air, Climate and Atmospheric Change, Food Resources, Biodiversity, Security, Development and Economics, and Environmental Health. Abstracts and full bibliographic information for each article is given. Introductory articles on how human population impacts upon aspects of the environment can be found on the population/environment database home page at <http://www.cnie.org/pop/pophome.htm>

Environmental Laws and Treaties is maintained by *Pace University Law School* and includes organized links to primary legal sources on International Laws and Treaties, Federal Environmental Laws of the United States, State Environmental Laws, and Comparative Environmental Legislation. These can be found at <http://www.cnie.org/nle/nlelaw.htm>

The Virtual Library of Biodiversity, Ecology and Environment is maintained by *Rice University Center for Conservation Biology Network* and organizes information around the following topics: Global Sustainability, History of Life, Endangered Species, Captive Breeding, Exotic Introductions, Pollution, Protected Areas, Values of Biodiversity, National Issues (non-U.S.), State Issues (U.S.), U.S. Government and Legislation, International Treaties, Biodiversity and Conservation, and Conservation Education. This library can be found at <http://www.cnie.org/biodi/bioframe.htm>

Meetings and Conferences is a bulletin board for events of interest to the environmental science and policy communities. These can be found at <http://www.cnie.org/conferences.htm>

Careers and Opportunities includes Environmental Positions, Counseling, Corporate Research, Job Market Analysis, Salary Determination, Job Databases, E-Mail Headhunters, Resume Preparation, Resume Posting, Cover letters, Interviewing, Education, and links to other career sites (Mega Lists). These can be found at <http://www.cnie.org/career/megajob.htm>

All of these sites are accessible from the CNIE home page at <http://www.cnie.org>

Contact: Kevin Hutton, Webmaster, Committee for the National Institute for the Environment, 1725 K Street, NW, Suite 212, Washington, D.C. 20006-1401, (202) 530-5810, FAX (202) 628-4311, khutton@cnie.org



Meetings of Interest

August 23-27: 128th Annual Meeting of the American Fisheries Society, "Challenges for the New Millennium: Shaping the Future of Fisheries Science and the Fisheries Profession, Hartford Civic Center, Hartford, CT. Contact: Paul Brouha, (302) 897-8617, Ext. 209.

August 24-28: Meeting on Water Quality Standards, Water Quality Criteria, and Implementation, including Water Quality-Based Permitting, Philadelphia, PA. Contact: *The Cadmus Group*, (703) 998-6862; mrm98@cadmus group.com; <http://www.epa.gov/OWM>.

September 10-12: "Fourth Annual Mine Drainage Conference and Workshop." Sponsored by the Office of Surface Mining, Knoxville, TN. Contact: Bob Carvahal, OSM, (202) 208-4633.

September 14-18: "Working at a Watershed Level." Training course for federal, state, and local groups, Lexington, KY. Contact: Barry Tonning, The Council of State Governments, (606) 244-8228,

btonning@csg.org, <http://www.epa.gov/OWOW/watershed/wacademy/>.

September 20-24: WETLANDS '98 - Integrating Wetlands and Floodplain Ecosystems Into Water Resources/Watershed Management, St. Louis, MO. Coordinated by the *Association of State Wetland Managers* and the *Institute for Wetland Science and Public Policy*. Contact: Jon Kuslar, ASWM, P.O. Box 269, Berne, NY 12023-9746, (518) 872-1804, FAX (518) 872-2171.

September 21-24: Sixth National Nonpoint Source Monitoring Workshop, Cedar Rapids, IA. Contact: Lynett Seigley or Carol Thompson, Iowa Dept. of Natural Resources, Geological Survey Bureau, 109 Trowbridge Hall, Iowa City, IA 52242-1319, (319) 335-1575; FAX (319) 335-2754; lseigley@igsb.uiowa.edu, or cthompson@igsb.uiowa.edu.

September 27-30: Peaks to Prairies: A Conference on Watershed Stewardship, Rapid City, SD. Contact the Throne Ecological Institute, 5398 Manhattan Circle, Boulder, CO.

October 11-13, 1998 - North American Water Trails Conference, Shephardstown, WV. The 1998 conference will explain how to develop and manage a water trail, along with highlighting their many environmental, social and economic benefits. Contact: North American Water Trails Conference, c/o the Alliance for the Chesapeake Bay, 225 Pine Street, Harrisburg, PA 17101; Phone 717-236-8825; FAX (717) 236-9019; acbpa@pipeline.com.

October 20-29: River Restoration and Natural Channel Design, Pagosa Springs, CO. One of eight short courses presented by Dave Rosgen with Wildland Hydrology. Contact: Wildland Hydrology, 157649 U.S. Highway 160, Pagosa Springs, CO 81147; (970) 264-7120; FAX (970) 264-7121; wildlandhydrology@pagosasprings.net.

November 16-18: Incentives for the Protection of Nature, Savannah, GA. Contact: Bill Coleman, Manager, Biodiversity Protection R&D, EPRI, 3412 Hillview Avenue, Palo Alto, CA 94304, (650) 855-1084.

Congressional Action Pertinent to the Mississippi River Basin

Conservation

Rep. Bud Shuster (R/PA) introduced H.R.3866 to provide for the conservation and development of water and related resources, to authorize the Interior Secretary to construct various projects for improvements to U.S. rivers and harbors, and for other purposes

bill would cap funding levels at \$14 million, although program appropriations have never run over \$7.8 million. No grant money could be spent on lobbying, and funded projects would have to be "balanced and scientifically sound."

The bill's supporters also cautioned that attaching ESA-reform provisions to spending bills "could give the impression" that Republicans are attempting to dismantle the ESA through the "back door". The House is awaiting Senate action

Endangered Species

Senate action on S. 1180, a bill to reform the Endangered Species Act, is still on hold and has lost some of Democratic support. But lead Republican sponsors "remain hopeful the measure can be brought to the floor for a vote as a stand-alone bill sometime before the close of this year's session." Several players, including co-sponsor Sen. John Chafee (R/RI), discouraged the prospect of trying to pass parts of the bipartisan bill as riders. The measure, which has the backing of the Clinton Administration, "really all hangs together," he said.

Parks and Refuges

The Senate Energy and Natural Resources Committee on 5/20 approved the Vision 2020 National Parks Restoration Act. The House Parks Subcommittee passed S. 1693 on 6/23. It would overhaul National Park Service (NPS) management and funding sources, and alter the concessions process by setting up an advisory board to help the Interior Secretary on contracts and requiring those contracts to undergo a "competitive selection process." It also would direct NPS to write and regularly update a strategic management plan, follow guidelines to add

park units, extend the recreation fee demonstration program, and start research and resource monitoring programs.

Rep. George Miller (D/CA) sponsored **H.R. 3934** to reform concessions in the National Park Service and use revenues for resource protection and visitor use.

Property Rights

The Senate on 7/13 "effectively killed" by a vote of 52 to 42 a major property-rights measure pushed by Republican leaders. The Senate refused to limit debate on the measure, which would have allowed aggrieved landowners to take property-rights disputes directly to federal court, bypassing state courts and local resolution processes. A Republican leadership source "said it was unlikely that the legislation would be brought up again this year." The bill sought to give planners and developers a new tool to fight local restrictions on property use. Landowners currently must exhaust all local and State appeals before heading to federal court, a process that can take years.

Public Lands

Legislation charging new location fees for commercial filming and soundtrack recording on certain fed-

eral lands passed a House Parks Subcommittee markup on 5/21. **Rep. Joel Hefley (R/CO)** offered **H.R. 2993**, which, in amended form, would allow location fees to apply to all Interior land-- based on a "fair return to the government," and allow the Interior Secretary to set fees on a case-by-case basis

Sen. Ben Nighthorse Campbell (R/CO) offered **S. 2098** to preserve U.S. sovereignty over public lands and acquired lands owned by the U.S., and to preserve state sovereignty and private property rights in non-federal lands surrounding those public and acquired lands.

Rep. Rick Hill (R/MT.) sponsored **H.R. 3963** to set up terms and conditions for the Interior Secretary to convey leaseholds on certain property around Canyon Ferry Reservoir in Montana.

Water resources

Sen. John Chafee (R/RI) introduced **S.2130** to provide for conservation and development of water and related resources, and to authorize the Army Secretary to construct various improvement projects to U.S. rivers and harbors.

Sens. Ron Wyden (D/OR) and Conrad Burns (R/MT) introduced **S. 2189**, on 5/18 to amend the *Federal Water Pollution Control Act* to authorize use

of state revolving loan funds for construction of water conservation quality improvements.

Sen. Ben Nighthorse Campbell (R/CO) introduced **S.2140** to authorize Interior Secretary to participate in signing and planning the Denver water reuse project.

Wildlife

The House on 5/19 passed by a voice vote a bill, **H.R. 512**, concerning designations of wildlife refuges. Origin mired in controversy, a consensus emerged in May placating all sides. The new bill requires notification of elected officials and public announcement in local newspapers prior to final designation of a refuge.

Sen. John Chafee (R/RI) introduced **S.2095** to reauthorize and amend the *National Fish and Wildlife Foundation Establishment Act*.

Sens. John Chafee (R/RI) and Wayne Allard (R/CO) introduced **S.2094** to amend the *Fish and Wildlife Improvement Act of 1978* to enable the Interior Secretary to more effectively use the proceeds of certain items.

Sources: *Land! Letter Status Report*, Vol. 17, No. 11, 6/1/98; and Vol. 17, No. 13, 6/23/98; and *National Journal GREENWIRE, The Environmental News Daily*, 7/13, 7/14 and 7/17/98



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River Crossings

Volume 7

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Number 5

Fishable Waters Act

Twenty-six years after passage of the Clean Water Act (CWA) some 40% of America's waters remain unfishable and/or unswimmable, according to EPA reports. In response, a group of organizations that often differ on conservation issues stood side by side at a rally in Greensboro, NC on 8/6 to unveil the *Fishable Waters Act (FWA)* - legislation aimed at restoring America's waters to fishable and swimmable conditions. United as the *Fishable Waters Coalition*, the group developed landmark legislation which deploys voluntary, incentive-driven problem solving through watershed councils rather than through enforcement.

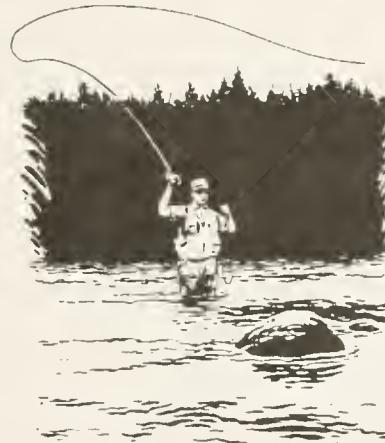
Members of the Coalition, chaired by the *American Sportfishing Association*, include the *American Fisheries Society*, *Izaak Walton League*, *Trout Unlimited*, *Pacific Rivers Council*, *International Association of Fish and Wildlife Agencies*, *Congressional Sportsmen Foundation*, *National Corn Growers Association* and, the host for the event, *B.A.S.S. Inc.* "We have a lot of faith in the American people - and especially in America's largest land stewards -- farmers, ranchers and the forest products industry," said *B.A.S.S. Inc.*, Chairman and CEO Helen Sevier. "Hard-nosed regulations may work, but they can cause resentment and polarization. A lot can be accom-

plished by working with people to prevent problems." The CWA, which revived the historic Potomac and Hudson rivers, and many other wa

ters from coast to coast, did so by effectively attacking "point source" pollution.

Non-point source pollutants, not addressed by the CWA, are much harder to trace and they impact entire watersheds. The problems which remain include:

- low stream flows,
- rivers disconnected from flood plains,
- degraded urban waters,
- sediment-choked streams and lakes, and
- erosion and runoff including mud, fertilizers, oil and pesticides carried into creeks, rivers and streams.



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S. Reed, chiefs of the Forest Service and Natural Resource Conservation Service, respectively. Also on hand were senior staff persons from the offices of Senator Christopher "Kit" Bond (R/MO) and Rep. John Tanner (D/TN). The two Congressmen themselves addressed the group via satellite.

The proposed FWA amendments to the CWA would include ten basic concepts:

- Incentives and resources for habitat improvement rather than writing and enforcing more stringent regulations;
- Consensus solutions designed by local, balanced watershed councils rather than by bureaucrats in Washington, D.C.;
- The best, or potentially best, fisheries would be addressed first rather than the "worst first" approach inherent in the CWA's pollution control strategies;
- A portion of existing federal expenditures for non-point source control programs under the CWA would be coupled with new funding and placed in the hands of states and Indian tribes to address fisheries needs on a watershed basis;
- Private resources would be tapped for the benefit of fisheries by providing opportunities to make explicit tradeoffs, called "innovative solutions," subject to appropriate constraints and the control of local, state and tribal decision makers;
- Protection, restoration and enhancement projects and measures would be implemented only with the consent of willing, affected landowners;
- Federal land managers, as well as others who undertake significant, federally funded planning and activities in floodplains, would consider the recommendations of watershed councils, and of state and tribal decision makers. If they disagree with those recommendations, they would be required to explain why;
- States and Indian tribes would have the option to assume the lead role in facilitating watershed planning and allocating resources to the most important projects and measures. If some states and tribes chose not to participate, available resources would be allocated elsewhere.
- The U.S. Department of Agriculture would be the lead federal

agency because its field resources are closest to the arena for action; the Department of the Interior and EPA would play supporting roles;

- Separate, targeted approaches would be used to address the special needs of urban fisheries, major waterways, and instream flows

Building on these concepts for a viable, effective approach to achieving fishable waters, the proposed amendment would add a new section to the CWA focusing on community-based action to address fisheries habitat needs. States and Indian tribes, working through or with state fish and wildlife agencies, would be encouraged to implement programs that support the development of comprehensive plans and recommendations by watershed councils. Habitat improvement projects and activities could take many forms, depend-

ing on local watershed needs and stakeholder priorities, including innovative solutions that create opportunities for the allocation of private resources to achieve fishable waters.

Once approved by a state or Indian tribe, recommendations put forward in watershed council plans would become the catalysts for positive action eligible for direct financial support. Funds could be provided to any person, through binding agreements with the state or tribe, either directly for project implementation or to supplement and complement funding available through many other existing federal conservation programs.

Funding for the FWA would be provided through several avenues. For federal, state, tribal and watershed council program administration and planning, new funding would be au-

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River Crossings is a mechanism for communication, information transfer, and coordination between agencies, groups and persons responsible for and/or interested in preserving and protecting the aquatic resources of the Mississippi River Drainage Basin through improved communication and management. Information provided by the newsletter, or opinions expressed in it by contributing authors are provided in the spirit of "open communication", and do not necessarily reflect the position of MICRA or any of its member States or Entities. Any comments related to "River Crossings" should be directed to the MICRA Chairman.

thorized. For implementation of watershed council recommendations, a combination of new and existing CWA funding authorization would be provided. The proposal recommends that 50% of existing funds under the non-point source program be set aside for fisheries habitat accounts - broadening the purposes and appropriately targeting the expenditure of federal resources to achieve fishable waters through place-based strategies designed by watershed councils.

Discrete program components are proposed for implementation by the Secretary of the Interior to deal with three special needs:

- funding and assistance would be provided to states for direct implementation of projects to improve urban fisheries;
- funds would be provided for planning and development of recommendations for habitat improvement in major waterways for which watershed councils do not exist; and
- funds would be provided to states that choose to designate instream flow levels necessary to support fisheries in order that participating states might acquire water rights in order to secure water flows in perpetuity.

According to the *Fishable Water Coalition* "...incentive-based action, offers our best opportunity for making meaningful progress toward sustaining healthy fisheries. For millions of Americans who care about our Nation's fisheries, the need to undertake this challenge is abundantly clear. If Congress will allocate the resources, and States and tribes will lead the way, the CWA can begin to deliver on its dormant promise of fishable waters."

Source: Ann Lewis, Director Office of Publicity & Information, B.A.S.S. Inc., P.O. Box 1790C Montgomery, AL 36141, (334) 272-9538, FAX (334) 279-7148

American Heritage River Update

In a press briefing on the American Heritage River (AHR) program, Elliot Diringer, Assistant Director of Communications for the *President's Council on Environmental Quality* and

Dayton Duncan, Chairman of the *American Heritage Rivers Initiative Advisory Committee* made the following points:

- There's been no decision yet as to whether there will be another round of AHR designations. The program and its success will be monitored and there will be a determination at a later date as to whether more nominations will be invited.
- There will be a symposium held in Atlanta in October, where all the communities that submitted nominations can come together, share their experiences and their lessons and hopefully learn things that they can then go back and use in their own communities.
- Information will be made available to all interested communities to assist in their efforts -- information specific to their regions and their rivers.
- Primarily what the designated rivers will get is a river navigator, who will be a federal employee who will serve as a liaison with the community and serve in that role for up to 5 years. This person will serve as an ombudsman who can help the community refine their plans and strategies and then help identify existing federal resources and programs that they can then take advantage of in carrying out their plans.
- No new money and no new regulation is involved, but the navigator we will be able to refocus existing programs to assist the communities in carrying out their plans.
- There will not be any land takings.
- The AHR will listen to the local communities and the local organizations who are struggling to try to reinvigorate their relationships with rivers. AHR will be there to help them tap into programs that already exist.
- One of the more important parts of AHR is just the simple fact of designation. It is a big deal to many people.
- AHR is entirely community-driven. If for some reason a community along a designated river chooses not to participate, they can withdraw at any time.

According to Duncan what really impressed AHR "...committee members -- and made our job that much harder -- was the enthusiasm that so

many groups had as they put their proposals together. There were some proposals where communities representing parts of rivers had never talked to those representing other parts of rivers, and the fact of putting the proposal together brought them together to think in terms of a whole watershed. Or certain places already had some programs going, and they were talking to others that didn't.

Diringer said "the number of rivers that were actually removed from consideration was rather limited...roughly a dozen of the 126 nominations drew objections and another dozen portions of the nominations drew objections. So I think it's important to bear in mind that the number of nominations was 126 and the level of support that we heard from Congress actually far outweighed the opposition. We had more than 200 members of Congress writing in support of this initiative, outnumbering the letters of opposition by more than four to one. We also had more than 500 mayors across the country, and 21 governors, all expressing support for this initiative. And I think it's also important to recognize the bipartisan nature of that support."

He said further that "There's nothing about this that is being foisted upon them, this is strictly upon their initiative...We're talking about loans and grants for economic development or for small businesses; pollution cleanup funds. It could be help for mapping their rivers from USGS. There's just...dozens and dozens of programs that really can be of value to these communities."

Source: The White House, *Office of the Press Secretary*, 7/30/98

Ohio River Coalition Formed

Representatives from the U.S. Fish and Wildlife Service (USFWS), U.S. Army Corps of Engineers (USACE), and the states of Indiana, Illinois, Kentucky, Ohio, and West Virginia met recently to forge a more effective working relationship to achieve fishery and related environmental improvements on the Ohio River and adjacent lands.

The coalition's long-range goal will be

to develop and implement a coordinated plan for improving the quality of life along the Ohio River. The plan will balance environmental conservation, public use of the river, and responsible economic growth. The full capabilities of the states, federal agencies and others will be used to implement the plan. The coalition's immediate goal is to introduce fishery, wildlife and habitat improvements using the expertise, current resources and authorities of various agencies. For example, enhanced fishing for bank and boat anglers is under consideration.

Other organizations that will be invited to participate in the coalition include the USEPA, the U.S. Natural Resources Conservation Service, the Ohio River Valley Water Sanitation Commission (ORSANCO), waterborne industry leaders, and 11 others interested in improving the Ohio River.

"In these times of limited budgets, it's essential that federal, state and other government agencies work together toward common objectives that represent the public interest. This is simply good business," said USFWS Regional Director Bill Hartwig. Dan Steiner, USACE Chief of Planning said, "The Service and the Corps of Engineers applaud the Ohio River Fisheries Management Team (ORFMT) for being a leader in interagency cooperation, facilitating the exchange of technical information, coordinating regulatory responsibilities, and developing a long-term shared management approach." The ORFMT was formed by state fishery agencies in 1990 to address Ohio River sport fishery issues.

In the past, agencies have focused on accomplishing individual Ohio River fishery and environmental improvements, rather than pursuing a cooperative interagency effort. Although previous efforts were coordinated extensively with all agencies involved, they did not take advantage of the potential of a cooperative interagency management approach.

For more information about the activities and programs of the U.S. Fish and Wildlife Service, Great Lake-Big Rivers Region, visit their web site at: <http://www.fws.gov/r3pao/>.

Maximizing Fish and Wildlife Benefits on Floodplains

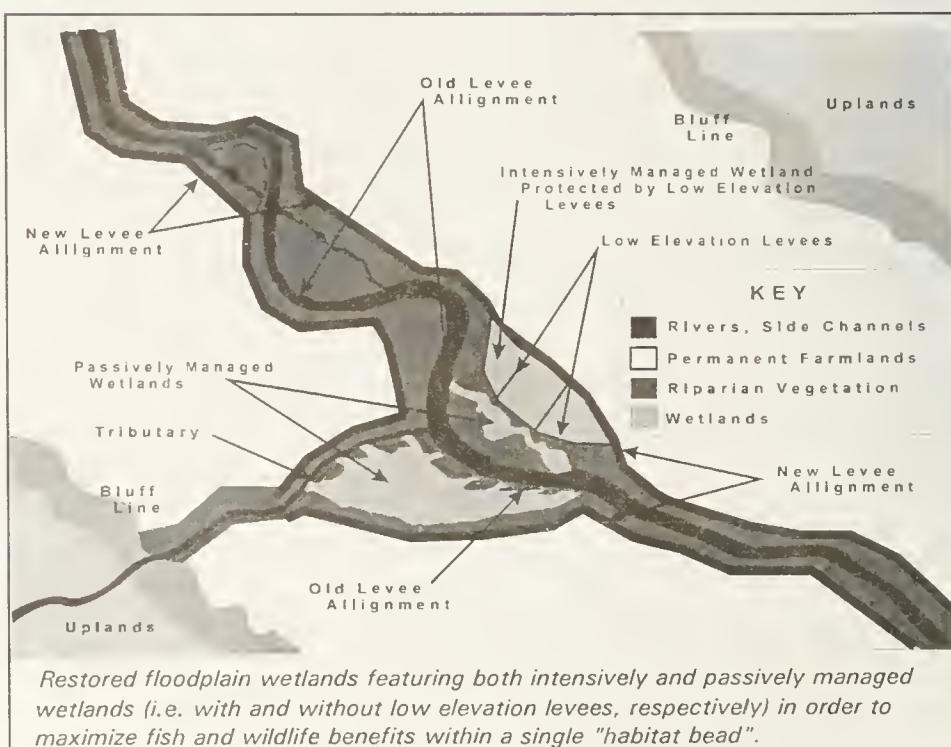
A recent *BioScience* article recommends integrating controlled and uncontrolled flooding of habitats along the lower Missouri River to maximize benefits for fish and wildlife species - in other words combining traditional low elevation waterfowl management levees with the passive open flow concepts proposed in *River Crossings* and elsewhere for fisheries restoration. An excerpt from the *BioScience* article follows:

"...The presence or absence of a surface connection between wetland basins and the river greatly influences species assemblages. Factors such as the frequency, timing, magnitude, and duration of connectivity and floodplain habitat structure determine the magnitude of biotic responses. The occurrence of unique species in each wetland type...and their differential use depending on location, water level, season, and habitat structure indicate that a mosaic of wetland types and successional stages is necessary to restore and maximize floodplain biodiversity.

'Controlled, temporary flooding of wetlands protected by levees is a successful management strategy

within the disrupted lower Missouri River floodplain to benefit mobile species, especially waterbirds. By contrast, fishes and turtles that require direct access to the floodplain to complete life-cycle events are at a great disadvantage within the fragmented and disconnected lower Missouri River floodplain. The 1990s floods have enhanced habitat for these groups in particular.

'Unfortunately, some of the most imperiled Missouri River vertebrates did not benefit directly from the 1990s floods because a wide, braided channel interlaced with channels and islands is no longer a feature of the lower Missouri River landscape. The lack of this channel-island complex has contributed to federal listing, or petitioning for listing, of birds that nest on exposed sand islands, such as the least tern (*Sterna antillarum*) and piping plover (*Charadrius melanotos*), and obligate large-river fishes, such as the pallid sturgeon (*Scaphirhynchus albus*), sicklefin chub (*Macrhybopsis meeki*), and sturgeon chub (*M. gelida*). Restoring the biological integrity of the lower Missouri River necessitates a natural flow regime (Poff et al. 1997) and segments of unconstrained channels and floodplains to enable high and low flows to create, modify, and connect in- and off-channel habitats...



'Recurrent floods of the 1990s demonstrated that the lower Missouri river-floodplain complex can be a self-renewing system. Flood-scoured river bottoms are the archetypal "beads" or "patches" of prime riverine wetland habitat envisioned in the "string of beads" restoration concept (Rasmussen 1994, Church et al. 1995). The essence of this concept is that not all of a large river's floodplain needs to be reopened to riverine flooding to revitalize ecosystem integrity. Rather, rehabilitation of essential components of river-floodplain structure and function can be achieved through the acquisition of a series of key floodplain habitat patches. These "beads" include low-lying lands that are vulnerable to periodic flooding, flood-prone areas adjacent to tributary confluences, remnant oxbows and backwaters, and flood-scoured agricultural lands. Once acquired, such sites are amenable to restoration and passive maintenance by natural or reregulated hydraulic forces. One meander bend in central Missouri, Lisbon Bottom, sustained floodbreached levees 12 times between 1943 and 1986 (SAST 1994) before the flood of 1993 damaged its infrastructure beyond repair... It was eventually purchased by the U.S. Fish and Wildlife Service as part of the Big Muddy National Fish and Wildlife Refuge and will provide an experiment in passive floodplain wetland restoration along the lower Missouri River.

'Our early postflood experience has demonstrated the resiliency of floodplain communities, given diverse habitats and recurrent flooding. However, flood scours may be shortlived features within the leveed lower Missouri River landscape because of sedimentation...Wetland dynamics are unbalanced unless erosion through periodic overbank flooding creates new basins as existing ones fill. Continued public acquisition of areas with a history of flood damage and high potential flood risk provides the most cost effective solution to reducing future flood destruction while maximizing ecological benefits.

'Controlled flooding needs to remain a component of natural resource management within the regulated lower Missouri River. We estimate

that less than 20% of the river's vast floodplain in Missouri is amenable to restoration and passive management, given the existing infrastructure and importance of agriculture. Consequently, to propose natural flooding on the scale experienced by early explorers would be irresponsible. Controlled flooding and intensive management across large areas of newly acquired floodplain are also impractical. These practices are expensive and currently have limited benefits for many species. High development and operational costs restrict intensive management to a few high-visibility locations.

'Instead, wetland managers need to adopt a broader ecosystem perspective and provide more flexible manipulation of habitats at some intensively managed areas or selected basins within them. This approach will enhance floodplain biodiversity and make a wider variety of natural resource recreation opportunities reliably available to the public. In the string of beads analogy, intensively managed lower Missouri River wetlands can be the "gems" to complement the many dynamic, but comparatively lowcost, passively managed beads. Knowledge developed from controlled flooding on intensively managed sites can be integrated with emerging knowledge...to amend river - floodplain restoration and management. Coupling complementary practices from contemporary and controlled flooding is essential to assure the long-term viability of regulated, large-river floodplains in the US Midwest."

Source: David L Galat; Leigh H Fredrickson; Dale D Humburg; Karen J Bataille; et al., *Flooding to restore connectivity of regulated, large-river wetlands*, *BioScience*, Vol. 48, No. 9, 9/98

Babbitt Urges Dam Debate

At the *Ecological Society of America* meeting in Baltimore, MD on 8/4/98 Secretary of the Interior Bruce Babbitt urged some 3,200 attending ecologists to "inform debate" over the future of dams. Babbitt reminisced about his recent sledgehammer wielding trips to the:

- Menominee River (WI and MN)

6/17;

- Elwha River (WA) 9/23;
- Neuse River (NC) 12/17
- Kennebec River (ME) 5/26;
- Butte Creek (CA) 7/14; and
- Bear Creek (OR) 7/15.

He said every stop on this dam-busting tour attracted enormous local, regional and national attention. He said that this huge public interest reflects a deep, widespread understanding that America overshot the mark in our dam building frenzy. "In the Nineteenth Century, construction of the Erie Canal triggered a spasm of canal building that went on and on, beyond any realistic expectation of economic return. Having a canal became the symbol of a progressive community. Everyone just had to have one, irrespective of its utility."

"In this century", he said "dam building moved on a similar trajectory -- dams that were clearly justified for their economic value gradually gave way to projects built with excessive taxpayer subsidies, then justified by dubious cost/benefit projections. The public is now learning that we have



paid a steadily accumulating price for these projects in the form of:

- fish spawning runs destroyed,
- downstream rivers altered by changes in temperature,
- unnatural nutrient load and seasonal flows,
- wedges of sediment piling up behind structures, and
- delta wetlands degraded by lack of fresh water and saltwater intrusion.

"Rivers are always on the move, he said, and their inhabitants know no boundaries; salmon and shad do not read maps, only streams."

"The clang of the sledge hammer is one of the oldest sounds known to man", he said. "Yet now, at the end of the twentieth century, we are using it to ring in an entirely new era of conservation history, moving beyond preservation or protection towards a deeper, more complex movement, the affirmative act of restoration." "Restoration", he said, "grows out of the same stewardship impulse as preservation, but pushes beyond. The coming age of restoration requires the active involvement of the citizens who live on the entire watershed. Most of all it requires a creative act; we must see not only what is, but envision what can be. It requires us to reach back into our history in order to grasp the future in which we might live."

"Restoration invites us to understand how the natural world -- with its complex storms, fires, forests, watersheds and wildlife -- functions as a whole. And the best unit to measure that whole, how it is more than the sum of its parts, is the river that runs through us. For that river reflects the condition of every single acre of the whole, integrated watershed."

"Nowhere has the impact of dams been more visible than on aquatic life. We once believed that freshwater flowing to the sea was 'wasted.' By trying to hold it back as long as possible, we blocked out anadromous fisheries from their ancient spawning grounds. In the 19th century, from Maine to the Chesapeake on down to Florida, in the course of damming rivers, we virtually destroyed the rich Atlantic salmon, shad, striped bass, herring and sturgeon as they made their way inland from the Atlantic."

"And in this century, with our massive projects up and down the Pacific-bound rivers, we have repeated this process of destruction, virtually decimating the great salmon and steelhead runs of the northwest, by continuing to build dams clear up into the 1970s. This year, we learn that roughly one third of all fish, two thirds of all crayfish, and three quarters of the bivalve freshwater mussels in America are rare or threatened with extinction."

"Let's give the economists their due: We seem to value something only

when it becomes rare. The loss of fisheries that we once took for granted has led to a new urgency demanding ways we can replenish them. Every single dam to which I brought my sledgehammer was removed for the benefit of one or more endangered aquatic species. Yet despite this progress there are still -- if we use established figures -- 74,993 dams in America, blocking 600,000 miles of what had once been free flowing rivers. That's about 17 percent of all rivers in the nation. If one wanted to unleash every one of those rivers -- something I clearly don't advocate as policy -- and restore those watersheds, it would take a lot more than one person swinging a sledgehammer every few months."

"But as we contemplate future ceremonies involving dams, here are some considerations:

- Dams are not America's answer to the pyramids of Egypt. We did not build them for religious purposes and they do not consecrate our values (even if some are named after Presidents). Dams do, in fact, outlive their function. When they do, some should go. There is a dam in Pawtucket, RI, spanning the Blackstone River. It powered the first mechanical mill in America, birthplace of our Industrial Revolution. Today, even as we move centuries beyond the water powered mills, we have chosen to preserve that dam as a historic marker of where we once were as a nation. As such, it is the exception that proves this rule.
- There also comes a point in the life of a dam where we can get the same benefits in other ways. On Butte Creek, the Sacramento River tributary, irrigation farmers could replace McPherrin Dam and three others with an irrigation pump and siphon. Quaker Neck Dam, which stored water for power generators, could be replaced with a different cooling system.
- Moreover, in some cases the price for the benefits is simply too high; the dam has grown too expensive relative to the loss of fish. On the Kennebec River, the age, location (close to the river's mouth), huge environmental costs and low generation at Edwards made it a relatively easy call, for removal. Owners of dams coming out on the Menominee found that taking a holistic approach

to the entire watershed would save them time, money and energy. Some could be phased out, while others reoperated with screens, fish passage and drawdowns."

"But all these conditions rest on the values and the scientific understanding of the larger community. Who, besides nature, decides whether a dam stands or falls?" Babbitt said that many of the consensus based decisions to remove dams are brought about by democratic, voluntary watershed councils that are cropping up all over the country. Larger dams pose more complex issues, for there are more, and bigger, economic stakeholders. Entire industries, the price of electricity for millions of people, water storage for cities are involved.

He said, "As citizens and scientists, ecologists can help to shape the restoration movement by examining and documenting the benefits that might be accrued by restoration of the aquatic ecosystem by removal or reoperation of a given dam in the watershed you may be involved in." He said, "We have plenty of powerful stakeholders willing to reassert the known, traditional benefits of dams -- irrigation, hydropower, urban water authorities, engineers. But the process of putting a value on the native life intrinsic to watersheds and ecosystems is something new, and the degree to which you can do so goes a long way."

In closing he said there is another way of expressing this: "My parents generation gloried in the construction of dams across America's rivers. My generation saw how those rivers were changed, deformed, killed by dams. Your generation must help decide if, how and where those dams stand or fall. I am reminded of Ecclesiastes: 'One generation passeth away, and another generation cometh: but the earth abideth always....All the rivers runneth to the sea, yet the sea is not full; to the place where the rivers flow, there they flow again...' A beautiful passage, but now haunting, for it is no longer true due to changes in my lifetime. I think back to my beloved Colorado River, which I hiked and rafted and saw change before my eyes. Once one of the mightiest rivers in America, it no longer makes it to the sea. That is a shame. As our genera-

tion passes, the toughest decisions rest firmly in your hands."

Source: News Release, Office of the Secretary of the Interior, 8/4/98, Contact: James Workman, (202) 208-6416

Mississippi River Crackdown

The Clinton Administration on 9/9 "disclosed one of its most far-flung environmental initiatives - 142 cases have been made against various types of alleged polluters located along the Mississippi River system." At a news conference in St. Louis, Attorney General Janet Reno and EPA Administrator Carol Browner described their joint "Mississippi River Initiative," which over the last year has netted 54 criminal convictions and nearly \$29 million in civil and criminal fines across the Mississippi River Basin. Justice officials have filed criminal charges in 31 cases, 13 of them in Missouri.



In two new developments, the feds announced *Shell Oil Co.* will pay a \$1.5 million fine and contribute \$10 million to environmental projects to settle "hundreds of violations" at its Wood River refinery in Roxana, IL, near St. Louis. The government also filed charges against *Clark Refining and Marketing Inc.* for "dozens" of violations at its refinery in Blue Island, IL, which is miles from the Mississippi River on a tributary near Chicago. *Clark* VP John Bernbom said the problems referred to in the feds' complaint were "history. This refinery today is operating in full and complete compliance with all rules and regulations".

The violations prosecuted since the *Mississippi River Initiative* was launched last year have included illegal dumping, illegal emissions, falsifying environmental reports, wetlands destruction, sewage overflows, chemical discharges and oil spills. The violators have included both companies and local governments, including the city of New Orleans, which paid \$200 million to settle a sewage case.

The Mississippi "one of the busiest commercial waterways in the world, provides drinking water for about 18 million people, and serves as a swimway for more than 240 fish species". The river drains one-fifth of all the water running off North America, "collecting pollutants with each cascading drop." Yet, "large portions" of the river are "unsafe for whole-body-contact recreation," and "most fish species" can be eaten only occasionally or not at all. Jessica Landman of the *Natural Resources Defense Council* noted that one of the river's biggest pollutants is runoff from farms, which is not covered by "traditional" enforcement measures.

Sources: John Fialka, *Wall Street Journal*, 9/10/98; Libby Quaid, *AP/New Orleans Times-Picayune* online, 9/9/98; Paul Hampel, *St. Louis Post-Dispatch*, 9/10/98; Peter Kendall, *Chicago Tribune*, 9/10/98; Michael Grunwald, *Washington Post*, 9/10/98; Gary Fields, *USA Today*, 9/10/98; and *National Journal's GREENWIRE*, *The Environmental News Daily*, 9/10/98

Pfiesteria Infection Causes Mental/Visual Impairment

People exposed to the water-borne microbe *Pfiesteria piscicida* can develop reversible but "severe" difficulties in learning and concentrating, according to a new study by *University of Maryland* researchers that was published in the British medical journal, *The Lancet*. The study of 19 Maryland residents who reported a range of neurological symptoms after being exposed during outbreaks of *Pfiesteria* last year supports earlier concerns that the single-cell organism can pose health hazards to people. It is the first study to confirm the link

and appear in a peer-reviewed journal. Researchers found that most of the eight most heavily exposed fishers scored worse in a memory recall test than 95% of the general population. Cognitive ability returned to normal after a few months from the time of exposure, but some symptoms lasted as long as six months.

Another USEPA study released on 9/17 found that fishers exposed to *Pfiesteria* may also develop chronic visual impairment. EPA neuro-toxicologist Kenneth Hudnell said tests conducted on North Carolina fishers found that those who worked in rivers where *Pfiesteria* had caused fish kills "had a reduced ability to detect visual patterns compared with other anglers plying uninfested areas". Visual sensitivity problems can cause people to perform tasks more slowly and can cause increased risk due to accidents, and it is too soon to say whether the visual impairment is reversible, Hudnell said. "Further research is needed before definitive conclusions can be made as to whether *Pfiesteria* may adversely affect vision or pose other human health risks". Researchers don't know yet the means by which *Pfiesteria* affects the nervous system. Maryland researchers plan to use advanced brain scans to determine toxic affects on the brain and assess whether last year's victims are more susceptible to the microbe or whether they've built up an immunity.

The presence of *Pfiesteria* in East Coast waterways has also stirred policy debate in Congress and among state officials. The USEPA, *Centers for Disease Control* and several states are studying outbreaks of the microbe, which is thought to become toxic, in part, because of nutrient-rich pollution from farms and waste-treatment plants. In North Carolina researchers are producing the toxin so they "will not run out of material to study."

In early August the Clinton Administration authorized \$221 million over the next 10-15 years to help North Carolina fight runoff pollution that in late July led to the first major *Pfiesteria* outbreak of the season. An estimated one half million fish were reported killed. The \$221 million, which is subject to congressional approval, would help farmers develop long-term strategies to reduce runoff

pollution, and to create up to 100,000 acres in buffer strips along state waterways and other projects.

A \$1 million monitoring system implemented after last summer's fish kills alerted Maryland officials to a small fish kill in early August, but the kill was not attributed to *Pfiesteria*. On 8/8, *North Carolina State University* opened a \$650,000 lab to serve as a multi-state clearinghouse for testing water samples for *Pfiesteria*. Meanwhile, scientists meeting on 9/22 in Washington, DC, warned that despite the absence of *Pfiesteria* outbreaks this summer, the toxic microbe could "easily come back next summer." Experts gathering at the *National Sea Grant College Program* could not say why the microbe failed to reappear this year theorized that stormy weather may have "flushed out" concentrations of the microbe. Some scientists say *Pfiesteria* has been building up in numbers for years, aided by nutrient pollution running off the land.

Scientists have also highlighted new faster and cheaper techniques to detect the toxic microbe. Parke Rublee, a professor at the *University of North Carolina* at Greensboro, said the new methods could cut costs from \$1,500 to \$15 per test and reduce the turnaround time from three weeks to a day or two. Two of these tests use DNA analysis to match known segments of *Pfiesteria*'s genetic code with those of unknown cells. A third test uses a fluorescent biochemical marker that attaches itself only to the microbe, making it easy to detect using a special microscope. JoAnn Burkholder, an aquatic botanist at *North Carolina State University*, "said she is confident" new research will lead to the discovery of what impact *Pfiesteria* has on health.

A new Duke University study said that an "unprecedented surge of silt, fertilizers and pollutants" in two North Carolina rivers has "decimat[ed]" the one-celled plants that help maintain a waterway's ecological balance. The crash in one-celled plants, or diatoms, over the last 50 years in the Neuse and Pamlico rivers may have given *Pfiesteria piscicida* and other harmful algae the opportunity to flourish,

researcher Sherri Cooper said. The increase in urban and farm pollution allowed some microscopic organisms to do well in the new environment, while others were ravaged, and the beneficial diatoms were among the losers. Cooper said diatoms, which keep harmful organisms in check, are "very good indicators of what's going on in a watershed".

Sources: David Brown, *Washington Post*, 8/14/98; David Morgan, *Reuters/New York Times*, 8/14/98; A.J. Hostetler, *Richmond Times-Dispatch*, 8/14/98; Douglas Birch, *Baltimore Sun*, 8/14/98; Hopkinson/Williams, *Wall Street Journal*, 8/7/98; Geoffrey Upton, *Baltimore Sun*, 8/7/98; White House release, 8/6/98; Todd Shields, *Washington Post*, 8/15; AP/*Richmond Times-Dispatch*, 8/8/98; Timothy Wheeler, *Baltimore Sun*, 9/18/98; John Wheelan, AP/*San Francisco Chronicle/Examiner* online, 9/18/98; Peter Goodman, *Washington Post*, 9/23/98; Margie Hyslop, *Washington Times*, 9/23/98; Heather Dewar, *Baltimore Sun*, 9/23/98; *Washington Post*, 9/14/98; and National Journal's *GREENWIRE*, *The Environmental News Daily*, 8/7, 8/10, 8/14, 8/17, 9/14, 9/18 and 9/23/98

Federal Ag Waste Strategy

Agriculture Secretary Dan Glickman and USEPA Administrator Carol Browner announced on 9/16 a draft plan to improve water quality and reduce health risks associated with runoff from animal feeding operations. In a letter to Vice President Al Gore, Browner and Glickman said "dramatic changes in the animal feeding industry in the last 20 years" prompted the search for a new, unified regulatory approach to containing wastes and ensuring the long-term health of the livestock industry. "Only about one-fourth of all animal feedlots are [currently] regulated by states".

Part of the Clinton Administration's Clean Water Action Plan's draft strategy seeks to stem agricultural runoff by requiring farms to obtain operating permits premised on waste management strategies. Specifically, the plan calls for farms to:

- modify animal diets to limit the

amount of nutrients animals produce in their excrement;

- properly manage waste,
- change the way animal waste is applied to fields as fertilizer,
- keep records on manure applications, and
- employ conservation methods.

Browner called the plan "the most aggressive strategy ever proposed" to address agricultural wastes. Glickman assured farmers that the plan would be "customer-driven," because "we want to hear from owners and operators of animal feeding operations" on how to refine the proposal

The *National Cattlemen's Beef Assn.* said that it would welcome national standards, but that the USEPA had relied on "faulty data" in reaching conclusions about the scope of the ag waste problem. The agency says about 35,000 river miles in the U.S. are adversely affected by livestock operations. *National Broiler Council* spokesperson Richard Lobb questioned whether the agencies have the legal authority to issue such regulations, suggesting that Congress would either need to order a rulemaking or amend the Clean Water Act.

The *Natural Resources Defense Council* (NRDC) called the strategy a "helpful step forward." But NRDC analyst Robbin Marks said the feds should have called for a national moratorium on new and expanding farms while their operations are reviewed. And Marks complained that the plan would not require the corporate owners of the animals to share responsibility with the farmers who raise them under contract.

A final strategy will be developed after a four-month public comment period. The draft strategy can be found on the Internet at <http://www.nhq.ncrcs.usda.gov/cleanwater/afo>.

Sources: Brad Knickerbocker, *Christian Science Monitor*, 9/17/98; Janelle Carter, AP/*San Francisco Chronicle/Examiner* online, 9/17/98; NRDC release, 9/16/98; *Washington Times*, 9/17/98; and National Journal's *GREENWIRE*, *The Environmental News Daily*, 9/17/98

State Ag Waste Update

Discussions among poultry groups to determine how to improve operations and protect water and soil quality are exposing regional differences, reports the AP. The *National Broiler Council*, the *National Turkey Federation* and the *U.S. Poultry and Egg Assn.* this year have been meeting with USEPA and Agriculture Dept. officials to discuss uses for chicken manure, such as burning it for energy. But the groups are "still grappling" with questions about who will pay for new technology research, educational programs and nutrient-management plans to control phosphorous runoff.

Farmers in Delaware, Maryland and Virginia are "particularly sensitive" to runoff issues because of outbreaks of *Pfiesteria piscicida*, a toxic microbe that some scientists have linked to farm nutrients. Steve Corazza, a farmer in Delaware, said EPA officials "have made it clear they are not interested in harsh regulations or a mandatory program," but they are opting instead for voluntary compliance programs. Environmentalists complain they have been kept out of the process.

Recent developments in the various states are summarized below:

Alabama - The state Dept. of Environmental Management has finished drafting rules for concentrated animal feeding operations (CAFOs) that address construction, operations, training and inspection requirements.

Arkansas - Voluntary efforts to reduce phosphorus levels in the Illinois River basin of northwest Arkansas and northeast Oklahoma "are paying off," according to a new report by the Engineering Committee of the *Arkansas River Compact Commission*. The commission said the amount of phosphorus detected at four Arkansas sites has dropped by an average of 25% over the past five years. The data for Oklahoma were mixed, with four sites showing varying degrees of improvement and decline. Chuck Bennett, chief of the Water Division of the Arkansas Dept. of Pollution Control and Ecology, attributed the improve-

ments to efforts by municipalities, farmers and poultry producers to reduce polluted runoff.

Colorado - Gov. Roy Romer (D) announced in late September his support of a ballot initiative that would require the state to regulate corporate hog farms. Romer hosted an electronic "town hall" meeting in support of the initiative, linked by satellite conference to legislators and residents of North Carolina, Oklahoma, Iowa and Illinois. They "denounced" a competing amendment that would constitutionally bar new regulations. Dave Carter, president of the *Rocky Mountain Farmers Union*, said there are about 17 major hog farming operations in Colorado, with more on the way. Carter said the industry would be able to survive with regulation. But some hog producers say jobs would be lost if the regulations were adopted. The companies "also deny that they wreck the environment and argue that all livestock should face the same laws".

Idaho - *Sawtooth Farms* has proposed a \$1 billion project to raise 250,000 hogs on state land in southwestern Idaho's high desert. Supporters took "pains" to emphasize the environmental aspects of their plan that differ from other "huge" hog farms.

Illinois - During the first three months of 1998, the Illinois EPA found that 15 of 22 farms inspected were polluting nearby streams. The findings came as Fulton County lawmakers approved a resolution banning the construction of large-scale hog farms.

Iowa - During a July livestock production conference, Sen. Tom Harkin (D/IA) told leaders of the industry that regulation is inevitable and "not that far away." Harkin, who has proposed national standards, said the



move is likely to prompt the development of new farming techniques such as "manure banks" that can store excess waste until it is transported to areas where it can safely be applied to land. The USEPA and the Dept. of Agriculture are looking to broaden existing regulations.

Kansas - The environmental consulting firm, *Spectrum Technologies*, in August criticized a *Kansas State University* study "hailed by the hog industry" that found seepage from large hog-farm waste lagoons is "well within state standards." *Spectrum* Pres. Craig Volland said poor weather conditions caused a "large range of error" in three of the four lagoons tested and charged that the university is withholding parts of the study. Meanwhile, Kansas gubernatorial candidate David Miller, who is challenging Gov. Bill Graves for the Republican nomination, on 7/7 kicked off a two-day campaign trip by focusing attention on corporate hog farms. Miller said residents should have control over whether such operations are allowed in their communities.

Kentucky - State officials are developing new regulations for large hog farm operations and confined chicken-feeding operations. A *Lexington (KY) Herald-Leader* editorial said the recent study linking nervous system problems to *Pfiesteria* "strengthens the case for requiring stringent controls of runoff from large hog-and chicken-raising operations".

Mississippi - North Carolina-based pork producer *Prestage Farms Inc.* is suing six northeast Mississippi counties for enacting hog-farm restrictions. The company alleges the ordinances violate the equal-protection clause because they are "aimed directly at hog farms" and not at other livestock operations.

North Carolina - Waste lagoons at concentrated hog farms in a North Carolina county have led to a 100% increase in the amount of ammonia rain falling in the area in the past decade, according to a study by *North Carolina State University*. The study in Sampson County, the "heart of the hog belt," shows that the increase began in about

1985, correlating with the growth of the hog industry, according to researcher Viney Aneja. By 1996 the ammonia levels had more than doubled. The North Carolina Division of Air Quality reports that hog farms collectively discharge at least 186 tons of ammonia into the air every day, and that ammonia triggers algae blooms and fish kills. U.S. Agriculture Dept. research indicates that much of the ammonia wafting from farms is used by plant and forest systems. But the *Environmental Defense Fund* has urged state regulators to limit ammonia gases from hog farms. A *Raleigh News & Observer* (7/8) editorial said the *North Carolina State University* research "strengthens the case for proceeding cautiously with hog farm expansion, guided by an interest in safeguarding human and environmental health -- not just profit". The GOP controlled state House has approved a plan to study new technology to phase out the waste lagoons, while voting 83 to 17 to extend the moratorium on new hog farms by six months to 9/99. The bill now moves to the Senate. The state has also imposed several new restrictions on the *Carolina Food Processors* pork-processing facility in Tar Heel. The Division of Water Quality froze the amount of wastewater the plant can discharge into the Cape Fear River and barred the facility from accepting hogs from farms that have violated environmental regulations. The company had sought to expand its production and waste discharges, but regulators "balked" because the plant has been cited for "dozens" of environmental violations since it opened in 1993.

Ohio - Country music singer Willie Nelson, president of the non-profit advocacy group *Farm Aid*, sang "the praises of megafarm moratoriums" at an Ohio State Fair appearance. At a press conference before his concert, Nelson said his group will continue to give money to organizations opposed to large-scale livestock farms. However, *Ohio Farm Bureau* media director Joe Cornely, alluding to Nelson's tax problems in recent years said, "I have no doubt Mr. Nelson's heart is in the right place, but I'm afraid he's getting his farm policy advice from the same people who gave him his tax advice". Meanwhile, *Ohio State University* is

planning to team up with a pair of Ohio farmers to study two barn designs that could keep hog manure dry and serve as alternatives to storing liquid waste in lagoons. The "high-rise hog barns" and "deep-bedded hoop structures," would let hog waste dry as a solid in straw, cornstalks or other absorbent materials and make the waste easier to apply as fertilizer. Meanwhile, the Ohio Environmental Protection Agency has told the *Buckeye Egg Farm* to "temporarily shelve" plans to raise 18 million chickens at several facilities near Marion, but it gave the state's largest egg producer permission to expand other facilities and build two new ones. The decision "appears to represent a shift in policy by Gov. George Voinovich's (R) Administration. Environmentalists "said the decision may signal a more responsive environmental approach to granting large-scale farming permits".

Oklahoma - The state Agriculture Board in late July approved emergency rules for hog farming in order to implement new restrictions on the industry, including groundwater monitoring. The *Oklahoma Sierra Club* and residents "applauded" the proposed changes. Meanwhile, at an August USEPA hearing, state Environmental Secretary Brian Griffin "ripped" proposed federal regulations that would require new permits for large, confined animal operations near lakes and rivers.

Virginia - A Virginia circuit court judge said in July that the state can proceed with its suit against *Smithfield Foods Inc.* over pollution violations even though Virginia dropped the suit in mid-trial last year. State officials are seeking millions of dollars in civil fines from the pork producer for damages stemming from 22,520 alleged pollution violations between 1983 and 1994. *Smithfield* attorneys have argued that giving the state a second chance at the suit would constitute "double jeopardy." But Judge Westbrook Parker ruled that the case is a civil one and therefore double jeopardy does not apply. The judge also ruled that a separate lawsuit filed against *Smithfield* by the USEPA does not preclude the state from also suing the company. No trial date has been set in the state's case. *Smithfield* attorney Anthony

Troy says the company is considering filing an appeal in the state's Supreme Court.

Sources: Todd Spangler, *AP/Birmingham News*, 8/10/98; Mike Salinero, *Huntsville [AL] Times*, 7/13/98; Katherine Vogt, *Denver Post*, 9/24/98; Judith Crosson, *Reuters/lanetArk*, 9/25/98; Nicole Ziegler, *AP/Springfield [IL] State Journal- register*, 7/15/98; Nicole Ziegler, *AP/Springfield [IL] State Journal- register*, 7/15/98; *AP/Omaha World- Herald*, 7/21/98; Scott Rothschild, *Wichita Eagle*, 8/11/98; *AP/Baton Rouge Advocate*, 7/14/98; Brian Williams, *Columbus [OH] Dispatch*, 7/12 and 8/13/98; Mick Hinton, *Oklahoma City Daily Oklahoman*, 8/14/98; Paul English, *Oklahoma City Daily Oklahoman*, 7/23/98; Bill Geroux, *Richmond Times-Dispatch*, 7/30/98; *Charlotte Observer*, 7/6 and 7/9/98; *Idaho Falls Post Register*, 7/8/98; Roxanna Hegeman, *Wichita Eagle*, 7/8/98; Vinod Goel, *Cleveland Plain Dealer*, 7/8/98; Glenn/Williams, *Columbus Dispatch*, 7/7/98; DOJ release, 9/24/98; and Shiffer/Williams, *Raleigh News & Observer*, 9/24/98; Dave Hughes, *Little Rock Arkansas Democrat-Gazette*, 9/24/98; and National Journal's GREENWIRE, *The Environmental News Daily* 7/30, 7/28, 8/19, 9/28 and 9/29/98

State Runoff Laws Irrelevant on Federal Lands

In a major blow to environmentalists working on the agricultural waste issue, a federal court recently ruled that states cannot regulate water pollution from cattle grazing on federal land. The 9th U.S. Circuit Court of Appeals, which holds jurisdiction over nine western states, on 7/22 overturned a 1996 federal judge's ruling. The earlier decision required an Oregon ranching couple, who wanted to graze 50 head of cattle in the Malheur National Forest, to meet state conditions for reducing pollution of nearby salmon streams.

The *Oregon Natural Desert Association*, *Pacific Rivers Council* (PRC) and seven other environmental groups argued that federal regulation was too lax and that state laws should apply. They hoped the ruling would lead to a reduction in grazing on the vast federal

tracts in the West and its effects on water quality. While the short-lived decision applied only to grazing in Oregon, legal experts surmised it could have been extended to other polluting activities on federal lands, such as logging and mining.

However, the appeals court held that only the federal Clean Water Act applies to federal lands, and that the act authorizes states to require permits only for "point sources" of water pollution. Point sources are distinct and concentrated such as pipes and much different from general runoff like that from cattle grazing and other agricultural operations, the court noted. Moreover, states can regulate nonpoint source pollution only indirectly, through plans that are federally funded and approved by the Environmental Protection Agency, the court said.

While the environmental groups failed to persuade the court that state programs should apply in the absence of national ones, the Clinton Administration's Clean Water Action Plan calls for a unified policy regarding water pollution on lands managed by the various federal agencies. In its FY99 budget proposal, the White House requested \$69 million more than in FY98 for U.S. Forest Service water quality improvement efforts and \$24 million more for such programs at the Bureau of Land Management.

In the meantime, "States are still on the hook to ensure that federal land managers protect and restore water quality on federal land," said PRC official Mary Scurlock. "Fifty percent or more of [western] federal lands are not meeting water quality standards, many in significant part due to grazing." Lawyers for Grant County, OR, site of the grazing land in the case, said they were relieved by the ruling since the county depends on revenue from cattle grazing. Had the original ruling stood and been interpreted broadly, the county might have been required to seek state permits for some of its operations, they added.

Source: Tim Breen, *EESI Publishing*, 122 C Street NW, Suite 700, Washington, DC 20001, (202) 628-6500

Coast Guard Battery Pollution

In early September, an Alabama sportsman, the Alabama chapter of *Bass Angler Sportsmen Society (BASS)*, and approximately 25 other national environmental groups announced their intention to sue the U.S. Coast Guard in federal court for its failure to clean up hundreds of thousands of mercury-containing batteries that lie leaking under U.S. lakes and rivers, dumped there since the 1950s by the Coast Guard.

Under the Resource Conservation and Recovery Act, 60 days notice must be given to polluters allegedly endangering the environment or humans.

The Coast Guard for decades has maintained marker buoys that light ships' passage along interstate freshwater rivers and lakes, as well as, saltwater bays and sounds. In the past, when the 6 volt or 12 volt mercury and zinc batteries died atop blinking signal buoys, Coast Guard maintenance crews simply dumped the spent batteries into the water as they were replaced.

For those decades of careless pollution, U.S. Coast Guard Administrator Robert Kramek has apologized and says the Guard was "like many others, not environmentally conscious in the 1970s." He says the practice stopped in 1973 when rechargeable lead batteries were employed. But Ray Scott, founder of *B. A. S. S.*, said the practice of battery dumping continued well into the 1980s. "We have recovered batteries with manufacturing dates up to 1988," Scott said as he exhibited encrusted, leaking *Edison Carbonaire* batteries pulled by divers from Guntersville Lake.

In the shadow of the Bellefonte Nuclear Power Plant, divers at mile marker 392 emerged from 23 ft. of cold water with spent, broken batteries to prove Scott's point. In less than two hours, they retrieved 22



batteries, which Scott and Alabama *B. A. S. S.* Federation president Al Redding then delivered to the Coast Guard Station in Chattanooga. There, guardsmen in rubber gloves accepted the batteries and packaged them for disposal.

"The Coast Guard has told the Congress it will need \$50 million dollars just to clean around fixed light stands -- never mind floating buoys -- and to date, on two trips to retrieve batteries out of Guntersville Lake, it didn't even finish the job. These batteries we brought up today are proof of that," Redding said.

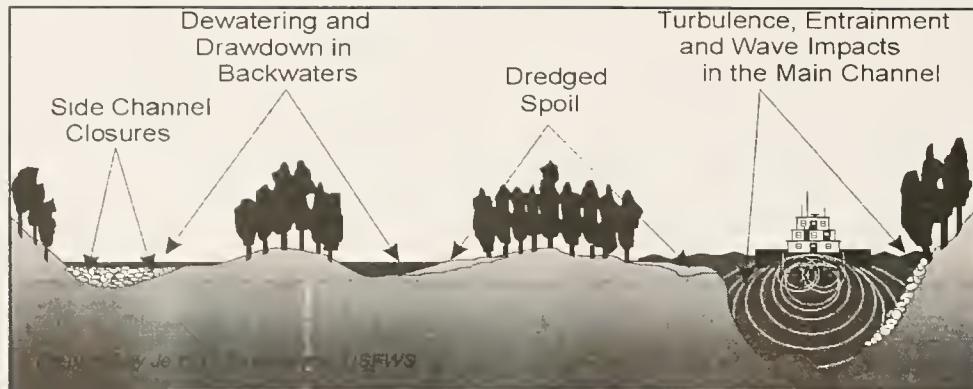
The Coast Guard and environmentalists do agree on one thing: The magnitude of the battery debris is enormous and affects every state. In Georgia, as of Jan. 1, officials had removed 2,400 batteries from 307 aquatic and land sites, including 163,000 pounds of battery parts. In Mobile Bay and Alabama's rivers, Navy Reserve divers have recovered 1,058 batteries. In Florida, more than 13 years after the initial discovery of batteries in Tampa Bay, most of the estimated 800 batteries remain submerged.

For John Cronin, attorney with *Pace University Environmental Litigation Clinic* in White Plains, NY, the lawsuit's impact will go beyond battery retrieval. It will strike at the way government agencies act when found guilty of environmental regulations in the future.

Sources: Gita M. Smith, *Atlanta Journal-Constitution*, 9/3/98; and Dr. Bob Williams, *Rivers Project*, Box 2222, Southern Illinois University, Edwardsville, IL 62026, (618) 650-3788

Barge Caused Fish Mortality

"Large North American rivers, including the Arkansas, Columbia, Cumberland, Illinois, Mississippi, Missouri, Ohio, and Tennessee, are used as transportation corridors for barges and other large commercial vessels. For example, in the Mississippi River above St. Louis, approximately 4.8 million barge-km of commercial navigation was logged during 1992. The towboats that push barges disturb much or all of the water column over



Large commercial vessels displace or disturb most of the water in the water column over their sailing line, entraining both adult and larval fishes. This displacement also drains many nearby channels and backwaters. Many fish, both larval and adult, displaced and entrained in turbulent propwash currents, are severely injured or destroyed in the process.

their sailing lines and have the potential to entrain and kill fish. Expansion of the navigation capacity of the Upper Mississippi River is being considered, and therefore resource managers in the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers and in the adjoining states needed estimates of the magnitude of entrainment mortality. This study is the first to measure this source of mortality of adult fish. We developed a method to estimate entrainment mortality of large riverine fishes and used it in Pool 26 of the Mississippi River and the lower 32 km of the Illinois River. Our approach relied on the combination of acoustically monitored bottom trawling behind towboats and fish detected in this entrainment sampling. Our estimate of entrainment mortality of gizzard shad is 9.5 fish per km of towboat travel, with an 80% confidence interval of 3.8-22.8 fish/km. Additionally, we conducted ambient bottom trawling in the navigation channels to estimate abundance of live fish. We observed additional recently killed gizzard shad, shovelnose sturgeon *Scaphyrhynchus platorhynchus*, and smallmouth buffalo *Ictiobus bubalus* in these ambient samples. Documentation of a propeller-killed shovelnose sturgeon was particularly problematic because it is similar to the sympatric federally endangered pallid sturgeon *Scaphyrhynchus albus*. To estimate the entrainment mortality of shovelnose sturgeon and smallmouth buffalo, we developed an ancillary estimator based on entrainment mor-

tality of gizzard shad obtained from the entrainment samples and on the marginal distribution of numbers of propeller-killed fish of each species in the combined ambient and entrainment samples. Our ancillary estimates of entrainment mortality of shovelnose sturgeon and smallmouth buffalo are both 2.4 fish/km of towboat travel with 80% confidence intervals of 0-6 fish/km. Because total annual tow distances are so large, our results suggest large system-wide annual losses. However there is considerable residual uncertainty because of the short duration and small geographic range of this study. Our methods are applicable to commercially navigated rivers generally, and perhaps also to the intracoastal waterways along the Gulf of Mexico and elsewhere."

Source: *Estimation of Mortality of Adult Fish Caused by Commercial Navigation in Large Rivers*. 1998. Steve Gutreuter, USGS, Upper Mississippi Science Center, 2630 Fanta Reed Road, La Crosse, WI 54602; John M. Dettmers, Illinois Natural History Survey, Lake Michigan Biological Station, 400 17th Street, Zion, IL 60099; and David H. Wahl, Illinois Natural History Survey, Kaskaskia Biological Station, R.R. 1, Box 157, Sullivan, IL 61951. Poster presented at USGS/BRD, Fisheries and Aquatic Resources Review, Madison, WI, August.

Money Down the Drain

"Growmark ships chemicals on the Illinois River, Cargill moves barge-loads of grain and the Army Corps of Engineers constantly dredges and rebuilds the locks and dams of the state's largest river.

'In this age of federal budget cutting, the dole for waterway shippers in the Midwest is enormous. The Army Corps of Engineers spent about \$1.3 billion in the 1980's to replace a single lock and dam on the Mississippi River. Only a trickle of this money comes back to the U.S. Treasury via a tax on barge fuel, and even this drop in the bucket is stored in a trust fund for more waterways construction. Most of the Corps money is simply a give-away to a few large corporations and shipping firms.

'A University of Illinois paper recently considered how much the federal government would receive if it were to auction off the entire Illinois River navigation system to the private sector. The answer \$50 million. Now consider that the plan by the Corps (is) to replace two of the river's locks for \$800 million. That's like deciding to spend \$800,000 to remodel your kitchen when the bank just told you that your whole house is worth only \$50,000.

'The Illinois River ceased to be an economic factor in Chicago years ago. Very little traffic flows anymore through the Chicago Ship and Sanitary Canal linking Lake Michigan and the Illinois River. So the chief question is, will downstate farmers benefit from the Corps' expensive lock replacement plan? Even with the enormous federal dole, only farmers within 50 to 75 miles of the river find it cheaper to ship by water than by rail. Waterway shippers now charge those farmers prices just low enough to keep them from shipping by rail. If the present locks are replaced by larger ones, there is little incentive to charge the farmer less, even though shipping costs would have declined. All the shipper has to do is to keep the farmers from turning to the competition. Shippers claim that barges wait long times to get through the existing locks at certain times of the year. It costs commercial shippers \$300 to \$600 for every hour they wait to pass through

a lock. This product has a ready made solution: the Corps could charge more for lock users at peak times and less for those using the system at low use times. Airlines charge more for peak time use. Such pricing on the waterways would put the costs where they belong, on the river freight shippers.

'To justify the proposed lock replacements in Illinois, the Corps fantasizes a tremendous growth of river traffic. They have performed similar feats of "induced traffic" on the White River in Arkansas, the Tombigbee in Mississippi and the Chattahoochee in Georgia. All of these projects though' have been economic flops.

'Can the railroads handle the anticipated increase in grain and coal production that the Corps believes will occur over the next 50 years? Of course they can. The railroads saved farmers and others when they picked up the freight for several months during the 1993 floods. They did it before during the 1988 drought.

'Railroads can be run around the year, through the winter ice that often strand barges, and they serve consumers that live beyond river valleys. Overall, they carry 41 percent of the nation's freight ton-miles compared to only 7 percent by river barge. If the federal government bowed out of subsidizing waterways, the railroads have the infrastructure to expand, apparently very quickly, and carry much more grain and other bulk commodities.

'Another justification for waterway spending is that America's canals are an important link in our national defense transport system. Surely they jest. What shall we do when we want to move some huge missile from say Arizona to Georgia, build a National Defense Barge Canal? The

Corps' locks and dams cannot correct one overpowering "defect" of nature - America's rivers don't flow east-west like our commerce does.

'Finally, it is argued that Midwest grain has to be cheap to compete with foreign sources. That is true. But when grain prices go down, the economic justification for new and bigger locks becomes even shakier. It seems that large shippers like *Growmark* and *Cargill* want it both ways. They want high-priced grain to justify expensive navigation construction and low-priced grain for competition abroad.

'Environmentalists see the existing locks and barge traffic as damaging to a precious river ecosystem - stifling river flows, cutting off wetlands, churning up sediments and increasing the damage from pollutants flowing down the Illinois River chiefly from the Chicago suburbs. While federal and state officials should be thinking about closing some of these waterway antiquities, we can at least stop adding to the problem by following pork barrel logic."

Source: Bruce Hannon, *University of Illinois*, Champaign



Missouri River Navigation Benefits Farmers Little

Missouri River barges have little or no impact on rates charged by railroads to move goods anywhere near the river, according to a study released in August by the *Environmental Defense Fund*. The report contradicts a study prepared by the U.S. Army Corps of Engineers that claimed railroads lower their rates due to competition from shipping on the Missouri River.

The report's author, Dr. Phillip Baumel, Professor in Agriculture at *Iowa State University*, also found that the region's farmers would probably benefit more if water used for occasional barges on the Missouri River were instead saved and used to float barges on the Mississippi River below St. Louis during droughts. Mississippi River barging does result in significant transportation

benefits to farmers.

Missouri River barges carried an annual average of only about 1.5 million tons of commercial traffic, compared to almost 100 million tons carried on the Mississippi River below St. Louis. According to an earlier study by Dr. Baumel, the Missouri River carries less than 2% of the grain exported from any of the states it serves (Iowa, Nebraska, Kansas and Missouri). According to the U.S. Army Corps of Engineers, the Missouri River provides annual economic benefits of less than \$10 million per year. By contrast, other uses of the Missouri produce \$1.3 billion in annual economic benefits.

Navigation advocates have claimed that the potential competition of river barges forces railroads to lower their rates in ways that benefit farmers along the Missouri River. The report prepared for the U.S. Army Corps of Engineers estimated that railroads lowered rail rates roughly \$200 million per year.

Dr. Baumel's review of this report concluded that it was fundamentally flawed: "The report is sufficiently flawed that it provides no evidence to refute the common sense notion that barge traffic on the Missouri River is so small that railroads almost certainly ignore it." "Rail rates are based almost entirely on competition with other railroads, and, in recent years, on the ability of farmers to truck their corn and soybeans directly to the Mississippi River or to local corn milling plants and feedlots."

"The flaws with the report to the Army Corps start with the basic data," he said. "The study used deliberately coded reports of rail rates that cannot be used without a key to the code, which the authors simply did not have. They then arbitrarily rejected more than two thirds of the data. There is good reason to believe that much of the remaining data are equally unreliable."

Dr. Baumel's report also found that the conclusions of the report conflict with the conclusion of another Corps report, backed by Corps of Engineers traffic data, which found that the amount of grain taken by barge down the Missouri River is fixed by the

amount of fertilizer brought up the river. This means barges provide no meaningful competition to railroads for grain, in contrast to the finding of the report that grain shipments provided two thirds of the alleged benefits. "Use of the Missouri River is only likely to decline in the future because of the rapid growth of direct railering of grain to the west coast, to local feedlots and to other destinations that could not use the river," Baumel said.

By contrast, Dr. Baumel's review summarizes some of the critical problems faced by farmers when the Mississippi River below St. Louis runs shallow, which can bottle up three times as much commerce in a month as the Missouri River carries in a year and more than double barge rates.

"The Army Corps of Engineers has indicated that water from the Missouri River could be used to help keep barges moving on the Mississippi River at critical times if it were not used up to support barges on the Missouri River," said Dr. Baumel. "The region and the Army Corps should take a hard look at the trade-off because it would probably be of real benefit to farmers."

Source: *Missouri Monitor*, Vol. 1, No. 4, September 1998

Hormone Disrupters and Fish

Scientists have found that "everyday" concentrations of sewage effluent in rivers seem to contain estrogen-like chemicals that cause fish to be hatched as half-male, half-female, "a surprising discovery that suggests pollution is feminizing animals throughout the wild." The study by researchers from *Brunel University* and the UK government in the 9/98 issue of the journal *Environmental Science and Technology* provides new evidence that hormone-disrupting pollution "could be a global ecological threat." The research suggests that such problems are more widespread than previously believed.

The fish were studied in eight rivers throughout the UK that are downstream from sewage treatment plants and that are considered "typical" in

terms of pollution -- leading the researchers to suspect damage to sex hormones "could be happening in many rivers around the world." In two of the eight rivers, 100% of the male fish sampled had feminized reproductive tracts. The other six rivers had rates of 20-80%. The prevalence and severity of the defects was highest in the areas where the effluent discharge was most concentrated.

Hundreds of widely used chemicals, found in products including pesticides, cosmetics and plastics, are thought to mimic estrogen or block testosterone and disrupt the endocrine system that is the key to sexual development. The British team could not pinpoint the culprit chemicals, because sewage is a mix of everything that is washed down drains. The researchers say their findings mark the first documented example of "widespread sexual disruption in wild populations of any vertebrate." Most disturbing, they said, is the fact that discharges from sewage treatment plants are "an inevitable consequence of human existence."

But chemical industry officials doubt that hormone problems occur at the low levels of pollution that animals and people typically encounter. And they say that if hormone disruption is occurring, it is found in animals living in "hot spots," such as Great Lakes harbors, that were created before certain chemicals like DDT were banned.

Sources: Marla Cone, *Los Angeles Times*, 9/22/98 and National Journal's GREENWIRE, *The Environmental News Daily*, 9/22/98

Lake Erie Too Clean??

The *Ontario Federation of Anglers and Hunters* is pushing for weaker pollution controls along Lake Erie, making the controversial claim "that cleaner waters are harming an ecosystem that has grown accustomed to pollution." Largely due to stricter limits on discharges from sewage treatment plants, phosphorus loadings in the lake have dropped from a peak of 28,000 tons in 1968 to nearly 11,000 tons in recent years. But the drop has coincided with "ma-

jer" population declines in walleye, yellow perch and other fish species.

The federation says levels of phosphorus, small concentrations of which are critical to plant growth, may have fallen below the level necessary to foster plant growth and sustain fish, and could indicate that some fish "are better adapted to the murky water." Despite the federation's plea, the Lake Erie committee of the *Great Lakes Fishery Commission* has recommended maintaining discharge standards pending more study.

Meanwhile, some researchers have expressed concern about the push to boost phosphorus levels in the lake. *Ohio State University* zoology professor David Culver said, "If you change phosphorus dynamics, you influence everything." Culver added that increasing phosphorus levels could boost populations of the non-native zebra mussel without aiding fish.

Sources: Martin Mittelstaedt, *Toronto Globe & Mail*, 3/4/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 3/6/98

Lake Pontchartrain Spillway Studies

Seasonal marine life has returned and salt levels are back to normal in Lake Pontchartrain a year after the Bonnet Carre Spillway was opened, according to Corps of Engineers data presented at a *University of New Orleans* symposium. The studies were taken after the spillway's eighth opening. But by day's end, the only consensus among meeting attendees was that after more than \$1.5 million of studies, more in-depth looks at freshwater effects on the brackish 626 mi.² lake are needed.

Samples show that last year's opening was not the worst case scenario many feared, the Corps said. Widespread oyster deaths did not occur. Although last spring's brown shrimp season was devastated, the white shrimp crop was the same as the previous year. The lake had a bumper crop of blue crabs last year, said Corps biologist Bruce Baird.

"In my opinion, the lake is fully recov-

ered except for two areas: we still have problems with turbidity and we're not sure how the lake is doing after the tremendous load of spillway nutrients," said Carlton Dufrechou, executive director of the *Lake Pontchartrain Basin Foundation*. But some fishermen disagree, saying the price for crabs has spiked to more than twice last year's cost because of their scarcity in the lake.

The opening of the spillway unleashed a nutrient overload on Lake Pontchartrain, which took months to recover, a marine biologist said. Water from the Mississippi River travels through 5.7 miles of land before reaching the lake, and that isn't nearly enough land to soak up the nutrients that have been blamed for causing an algae bloom of historic proportions, *Louisiana State University* biologist Gene Turner said.

Turner used last year's spillway opening to study how the lake would fare with a permanent Bonnet Carre freshwater diversion. Bowing to environmentalists who decry the plan, Gov. Mike Foster killed the \$85 million diversion by withdrawing state money. But the Corps and environmentalists said they are studying a smaller plan that would use nearby wetlands to filter river water to the lake. Turner said the surrounding swamp still would not soak up enough nutrients to prevent damage. The nutrients, nitrates and phosphates, are from agricultural runoff carried down from the upper river basin.

Source: *Mississippi Monitor*, June 1998

National Logging Ban Lawsuit

A coalition of environmental groups on 9/9 filed suit in U.S. District Court in San Francisco seeking to halt logging in all 151 national forests. Twenty groups, led by the Tucson-based *Southwest Center for Biological Diversity*, want all logging stopped until the U.S. Forest Service (USFS) issues a national forest management plan and outlines the plan's environmental impacts. The 1974 Renewable Resources Planning Act requires the agency to develop 5-year plans analyzing the impacts of activi-

ties in national forests such as logging, mining and grazing.

Several years ago, the agency issued a never-finalized draft plan for 1995-2000 that showed recreational activities were expected to contribute 32 times more income and employment than the timber industry. Last year the USFS reported that nationwide, it was spending \$15 million more/year on logging programs than private companies were paying for the wood. The coalition says the USFS should be forced to admit that logging is a "money loser" and jeopardizes recreational activities by disrupting "environmentally sound land."

Critics of the agency's draft plan said it "overestimated recreational values." House Agriculture Committee Chair Bob Smith (R/OR) last year "demanded" that the Clinton Administration "rework the analysis". But last year, a rider to the Interior Dept. spending bill specifically prohibited the USFS from completing the plan, and a similar rider is included in this year's pending budget bill. Logging on public lands provides about 4% of the nation's wood. The *Southwest Center* said its intent was to restart the planning process for the forests.

Sources: Rhonda Bodfield, *Tucson Arizona Daily Star*, 9/10/98; Alex Barnum, *AP/San Francisco Chronicle/Examiner online*, 9/11/98; and National Journal's *GREENWIRE, The Environmental News Daily*, 9/11/98

Miscellaneous River Issues

Atchafalaya Basin Protection Plan - Louisiana and Army Corps of Engineers officials in late August unveiled a broad plan to protect the Atchafalaya River Basin, especially its cypress and tupelo swamp areas. Sediment from spring floods threatens to fill in much of the basin over time, destroying "major stretches of cypress forest." To avert such destruction, the \$338 million plan would direct Mississippi River flood water through the 838,000 acre basin via a Corps flood-control structure. The Corps also proposes to buy 20,000 acres of old-growth cypress trees and tupelo swamps from willing

landowners and easements of over 338,000 acres of private land "that will severely restrict its use." The plan also calls for the Corps to build water-management projects to preserve wetlands in the basin. The Louisiana Legislature will consider the proposal next year. More information can be obtained on the Atchafalaya project by contacting the following web site: www.dnr.state.la.us/sec/atchafalaya/index.ssi. Sources: Mark Schleifstein, *New Orleans Times-Picayune*, 8/26/98; Bobby Reed, Louisiana Dept. of Wildlife and Fisheries; and National Journal's *GREENWIRE, The Environmental News Daily*, 9/1/98

CA Sewage to Drinking Water Plan - The city of San Diego is hoping a "sober presentation of scientific evidence" and a \$2 million public relations campaign will "persuade the public to swallow" its plan to use repurified sewage for drinking water. City officials stand behind the purity and safety of drinking water derived from the "multiple-barrier method" to treat sewage and reuse it. The method first filters out impurities, then treats and disinfects water with softeners and ozone and mixes it with "raw water" from runoff and imported sources in an open reservoir where it sits a year before being used. San Diego imports 90% of its water from the Colorado River and other sources, and although San Diego's population has leveled off at 1.2 million, its average daily consumption of water has increased. A poll taken for the city indicated that 60% of 500 respondents approved of the plan. Other California communities are employing similar plans to treat sewage for drinking water and the San Diego program has been looked at as a model to other "dehydrated" cities like Hong Kong and other municipalities in Australia and Japan. Source: Stacy Kravetz, *Wall Street Journal*, 9/10/98; and National Journal's *GREENWIRE, The Environmental News Daily*, 9/10/98

Chippewa River Floodplain Restoration - The Wisconsin Dept. of Natural Resources is proposing a plan to preserve prairie along the Chippewa River that provides habitat for several birds on the state endangered species list. The lower Chippewa River also provides habitat for the endangered paddlefish and the crystal darter. Officials hope

to encourage land preservation in a 250,000-acre area by giving financial aid to landowners. Officials say the lower Chippewa Valley "can expect urban sprawl eventually" from neighboring St. Paul, MN, and Eau Claire, WI. Sources: *AP/St. Paul Pioneer Press*, 7/14/98 and National Journal's GREENWIRE, *The Environmental News Daily*, 7/17/98

Clark Fork Headwaters Cleanup - Cleanup of the "largest Superfund complex in the country" has turned Butte, MT, into a "giant test laboratory for cleanup technologies". More than a century of copper mining in Butte and the surrounding area left the headwaters of the Clark Fork tainted with heavy metals, scarred mountains, and an open pit of toxic water in the middle of the town. The *Atlantic Richfield Co.*, abandoned the mine in 1979 and stopped pumping water out of the pit in 1981. The open water pit is now a 30 billion gallon toxic lake that grows by 7.5 million gallons/day and threatens to contaminate wells, creeks and wildlife. It is expected to pollute the surrounding aquifer by 2022 if cleanup attempts fail. *ARCO* plans to spend \$48 million to build two plants to treat the water indefinitely at a cost of \$14 million/yr. Cleanup strategies include adding lime to the water to neutralize the sulfuric acid and adding cow manure, also called a "submerged bioreactor," to the acid mine drainage to raise alkalinity levels and neutralize the water. Source: Jim Robbins, *New York Times*, 7/21/98 and National Journal's GREENWIRE, *The Environmental News Daily*, 7/21/98

EPA to Set LA Pollution Limits - A U.S. District Court judge on 9/22 said the USEPA must step in to determine maximum allowable discharges into 255 water bodies in Louisiana that do not meet EPA water-quality standards. Under the Clean Water Act, states are to set a "total maximum daily load" (TMDL) for certain pollutants in waters not meeting EPA standards. The *Louisiana Environmental Action Network* and the *Sierra Club* sued the EPA in this case because the state has set TMDLs for only 17 of its 255 substandard waters. Judge Mary Ann Lemmon ordered the EPA, within 90 days, to file "a reasonable schedule" for setting the

TMDLs. However, parties to the suit disagreed on whether an existing agreement between the EPA and the state Dept. of Environmental Quality will be adequate to conform with the order. The 6/97 agreement called on the federal and state agencies to work together to set the TMDLs over 12 years. EPA Region VI spokesperson Dave Bary said, "We are not aware of the judge indicating the 12 years is not satisfactory." But plaintiffs' attorney Eric Huber of *Earthjustice Legal Defense Fund* said that by ordering a "reasonable schedule," the judge meant that 12 years was too long. The EPA has not yet decided whether it will appeal the decision. Sources: Kevin McGill, *AP/Biloxi Sun Herald*, 9/24/98; Mike Dunne, *Baton Rouge Advocate*, 9/24/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 9/25/98

EPA Transfers State NPDES Program To TX - Responsibility for the nation's second-largest clean water program will shift from the feds to the state of Texas, the USEPA announced in September. After submitting a satisfactory state program that meets all federal Clean Water Act requirements, the EPA approved the Texas Natural Resource Conservation Commission to operate the federal National Pollutant Discharge Elimination System (NPDES). The move makes Texas's program the second-largest after California. Until now, Texas companies needed to obtain wastewater permits to discharge into the state's 15 major river basins and 8 coastal basins from both state and federal agencies. The state takeover of the permit program will end duplication and therefore reduce companies' paperwork. EPA will continue to oversee the program "via permit reviews, audits and inspections." EPA Region VI official Gregg Cooke said, "EPA, through its strong oversight program, will ensure that the transfer of this program to Texas continues to advance the clean water goals of our state". Sources: EPA Region VI release, 9/14/98 and National Journal's GREENWIRE, *The Environmental News Daily*, 9/11/98

Fish Passage at Wildlife Refuges - Stocks of many anadromous fish species are in steep decline all along the east coast. One cause of this

decline is the construction of barriers that prevent upstream migration to spawning grounds. On some coastal wildlife refuges, streams have been dammed to create water impoundments for migratory birds. The U.S. Fish and Wildlife Service's Delaware River/Delmarva Coastal Ecoteam and Gloucester Office of Fishery Assistance (GOFA) conducted a study to determine if vertical slot fishways would pass anadromous fish into these refuge impoundments. Testing was conducted at Prime Hook National Wildlife Refuge. Participants in this project in addition to GOFA and Prime Hook were the Delaware River Coordinator, Chesapeake Bay Field Office, and the South Zone Biologist. Sampling was conducted over five periods: 3/18-20, 3/27-29, 4/2-4, 5/23-25, and 6/16-18. Hoop nets 24" in diameter and 8' long were used. Netting material was 1.25" stretch nylon. Fourteen species of fish representing eight families plus blue crabs were documented to use the fishway. Families included *Anguillidae* (eel), *Centrarchidae* (sunfish), *Clupeidae* (herring), *Cyprinodontidae* (killifish), *Cyprinidae* (minnow), *Ictaluridae* (catfish), *Mugilidae* (mullet), and *Percichthyidae* (temperate bass). The vertical slot fishway was adequate to allow passage of any fish ranging in size from one inch to twenty-four inches in length. Source: U.S. Fish and Wildlife Service, Delaware River/Delmarva Coastal Ecosystem Team, FY97 Annual Report

Flood Insurance/Buyouts/Floodplain Management - The National Flood Insurance Program (NFIP), which provides flood insurance to homeowners, has paid more in claims than buildings are worth, according to a recent *National Wildlife Federation* (NWF) report that "calls into question the regulations governing" the program. The 30-year old program is supposed to be self-sufficient, but the Midwest floods of 1993 and 1995 have forced the program to borrow money, creating a \$725 million debt, according to Mark Stevens of the Federal Emergency Management Agency (FEMA). The report, based on NFIP data, is the first comprehensive study of voluntary property buyouts and relocations as a new floodplain management option. The Vienna, VA-based group found that although repetitive-loss properties

represent only 2% of all properties insured by the program, they accounted for 40% of the NFIP payments between 1978 and 1995. Since the Midwest floods of 1993 the government has bought more than 17,000 properties in flood plains in 36 states and one territory. NWF called on federal agencies to expand new programs for buying houses in areas prone to flooding and letting low-lying land revert to a natural state. Congress is considering Clinton Administration requests to expand this approach instead of



building more dams and levees, and the Army Corps of Engineers and the FEMA are both seeking funds to buy more flood-prone homes. As the Congress works to complete its biannual reauthorization of the Water Resources Development Act, the Corps is asking for \$325 million over six years to help relocate 15 to 20 riverside communities. Under the proposal, called *Challenge 21*, the Corps also would restore the flood plains to open space, which could be used for recreation. Assistant Secretary of the Army Joseph Westphal, in testimony to Congress in July said, "In some cases, ... we should focus less on trying to control flood waters and more on reducing the negative impacts of flood damages." The proposal is similar to the FEMA's Hazard Mitigation Grant Program, which helps to relocate flooded communities, except that *Challenge 21* would move people out of flood-prone areas before floods occur. Officials emphasize that both programs are "strictly voluntary" on the part of the communities. Sources: Michael Smith, *New Orleans Times-Picayune*, 7/26/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 7/29, and 8/20/98

Fox River Cleanup - The cost of cleaning an estimated 40 tons of PCB contaminated sediment from the Fox River could reach into the billions, according to the USEPA's James Hahnenberg. Even after cleanup, about 40% of the PCBs in the river, a potential Superfund site, would remain, Hahnenberg said. Source: Tom Vanden Brook, *Milwaukee Journal-Sentinel*, 9/3/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 9/9/98

IN Visa Card - A new Visa card for "nature lovers" being promoted in Indiana will give a "small portion" of each transaction to the *Indiana Natural Resources Foundation* to buy and protect public lands. Sources: Kyle Niederpruem, *Indianapolis Star-News*, 7/14/98 and National Journal's GREENWIRE, *The Environmental News Daily*, 7/16/98

KY River Trash Gate - Ground was broken on 9/8 for a first-of-its-kind federal project designed to catch Cumberland River trash before it goes over a water fall and reaches Lake Cumberland in southeast Kentucky. The trash gate, being built by the Army Corps of Engineers for \$3.25 million, will consist of a steel and concrete gate protruding about 200 ft into the river. The idea is that trash will hit the gate and be pushed to the side of the river where it can be retrieved and sorted into piles to be recycled, sent to a landfill, or ground into mulch. If successful, it "could become a model for cleaning other rivers." The gate is part of a \$25 million program called *Personal Responsibility in a Desirable Environment*, launched last year by Rep. Hal Rogers (R/KY) and Kentucky Natural Resources Secretary James Bickford. Source: Andy Mead, *Lexington (KY) Herald-Leader*, 9/9/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 9/10/98

Lake Pontchartrain Oil/Gas Exploration - The Louisiana Mineral Board on 8/11 extended the moratorium on oil and gas leasing in Lake Pontchartrain for another two years to give an advisory committee time to study the effect of oil and gas exploration and production on the lake. Sources: Carl Redman, *Baton Rouge Advocate*, 8/13/98; and National Journal's GREENWIRE, *The Environmental*

News Daily, 8/18/98

Lake Michigan Water Sale - State Attorney General Frank Kelley on 9/17 sent a letter to the Canadian Environmental Appeal Board asking it to stop a permit that would let Ontario-based *Nova Group* sell water from Lake Superior to Asia. The company obtained a permit from the Ontario Ministry of the Environment to siphon up to 156 million gallons of water/year from the lake, but the permit was rescinded after protests from environmentalists and government officials in the U.S. and Canada. The Great Lakes Congressional delegation introduced a resolution in the House asking the president and the Senate to block the sale. Responding to the clamor, the Ontario minister of the environment canceled the deal. In his letter to the Appeal Board, Kelley said the issuance of the permit would set an "extraordinarily dangerous precedent". That episode was merely the latest in a series of efforts by "outsiders" to gain control over a portion of the Great Lakes' water, especially lakes Superior and Michigan. A 1986 federal law lets any of the region's governors veto another state's attempt to use water in areas that drain away from the Great Lakes. In 1996, officials in Akron, Ohio, 40 miles south of Lake Erie, wanted to divert 3.4-5 million gallons/day from the Great Lakes Basin. In 1992, Michigan Gov. John Engler vetoed a proposed diversion of Lake Michigan water planned by Lowell, Ind. And in 1988, several senators asked President Reagan to authorize an emergency diversion of water from the Great Lakes into the drought-plagued Mississippi River. Chicago and northern Illinois in the past have enviously eyed Lake Michigan, hoping to further tap into its richness and send it flowing through the Chicago Canal. Water is already diverted from Lake Michigan through the Chicago Canal and down the Illinois Waterway, providing an avenue for the introduction of aquatic nuisance species from Lake Michigan into the Mississippi River Basin. Among these species are the zebra mussel, round goby, and river ruffe. Sources: *Chicago Tribune*, 9/18/98; *The Associated Press Political Service*, *Associated Press*, 8/3/98 and National Journal's GREENWIRE, *The Environmental News Daily*, 9/22/98

MI Water Quality Study - Mississippi officials are "plowing ahead" with a statewide water-quality study "despite mixed signals from the federal government on what ought to be done." The Dept. of Environmental Quality (DEQ) has launched a study to determine the amount of pollution, or total maximum daily loads, that each waterway can support. The *Earthjustice Legal Defense Fund* in 1/98 sued the USEPA, seeking to force the agency to do the study itself or force Mississippi to do so. DEQ Executive Director Jimmy Palmer said the agency has begun to assess Gulf Coast waterways, but "he said the work is complicated by the federal agency's failure to provide the states with a blueprint to follow" in determining the amount of pollution allowed in each stream. EPA regional offices "have taken some different, contradictory approaches toward states in their regions," he said. The DEQ plans to study 10 watersheds over a 12-13 year period. Sources: Jack Ellicott, *AP/Biloxi Sun-Herald*, 7/13/98 and National Journal's GREENWIRE, *The Environmental News Daily*, 7/17/98

MT Cyanide Ban - A proposed initiative to ban future cyanide mining in Montana on 7/14 unofficially qualified for the 11/98 ballot. Opponents of the measure are "poring over the signatures" to look for flaws. Sources: Erin Billings, *Billings Gazette*, 7/15/98 and National Journal's GREENWIRE, *The Environmental News Daily*, 7/16/98

MT Supreme Court Ruling - The Montana Supreme Court in September ruled that 1995 changes to state water-quality laws violate citizens' constitutional right to a clean and healthy environment because they exempt potentially harmful activities from adequate regulation. Three environmental groups filed the suit to stop operations at the proposed *McDonald Gold Mine* near Lincoln. Sources: Erin Billings, *Billings Gazette*, 9/11/98 and National Journal's GREENWIRE, *The Environmental News Daily*, 9/11/98

NM Trout Recovery Sabotaged - "In an unusual case pitting fish against fish," saboteurs have dumped non-native fish in a western New Mexico stream, setting back an en-

dangered Gila trout restoration program. The New Mexico Game and Fish Dept. and the U.S. Fish and Wildlife Service had planned to reintroduce the Gila trout to Black Canyon Creek in New Mexico's Aldo Leopold Wilderness in the Gila National Forest after building barriers on the stream to keep out non-native rainbow and brown trout, which prey upon and hybridize the Gillas. But wildlife officials found that someone purposely introduced rainbows and browns beyond the barriers. Federal and state biologists said the numbers of rainbows and browns in the closed-off area could not be explained by natural causes, given the ages of the fish and the numbers found. David Propst of New Mexico Game and Fish said, "There's no question in my mind now that it's been sabotaged." Opponents of the Black Canyon recovery program say it will restrict recreational fishing options. Mark Miller, a fishing guide in Mimbres said, "We don't have that much fishable water left, and now they want to take Black Canyon, too. ... You start messing with people's livelihoods and they're going to fight it." But Miller's argument "rang hollow" to Michael Norte, president of *New Mexico Trout* and a supporter of the recovery program. According to Norte, less than 15% of water in the Gila National Forest is closed because of Gila trout, and the Black Canyon area was so heavily grazed that it was no longer "much good" for cows or fish. Norte said, "We did not take an outstanding fishery. It was trashed, over-silted ... This proves this is not about resource use. This is about political and religious extremism. These (the saboteurs) are extremists of the worst kind". Sources: Mike Taucher, *Albuquerque Journal*, 9/20/98 and National Journal's GREENWIRE, *The Environmental News Daily*, 9/23/98

NY Wetland Pollution - Inwood, NY-based *Oil Co. Inc.*, also known as *Eagle Oil*, has been ordered to shut down and pay \$3.5 million in fines for releasing petroleum products into area wetlands. The company must also submit a wetlands restoration plan and restore the area once the plan is approved. Sources: Monte Young, *Newsday*, 7/30/98 and National Journal's GREENWIRE, *The Environmental News Daily*, 8/6/98

Poplar Trees for Pollution Control - Genetically altered poplar trees that "act like 100-foot straws" by sucking contamination from soil and water might become a key tool in cleaning up polluted industrial sites. Through a process called phytoremediation, laboratory-designed poplars can safely store chemicals or metabolize them into "less volatile compounds," then release them into the atmosphere, according to a study by the *University of Georgia* published in the 10/98 issue of *Nature Biotechnology*. The poplar tree cleanup plan takes several years, but it is relatively inexpensive and is at least as effective as "high-tech soil roasting and groundwater filtering." Some scientists are concerned, however, because the process releases the "less volatile" byproducts into the atmosphere. David Salt, environmental chemist at *Northern Arizona University* said, "We may soon be using trees to heal the hurt inflicted on the Earth, but would we simply be exchanging soil pollution for air pollution?". Sources: Joseph Verrengia, *AP/Boston Globe*, 9/29/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 9/29/98

OH Mussel Rescue - A seven-year state and federal study is being launched to transform 10 ponds at *The Wilds*, a 10,000-acre wildlife refuge in eastern Ohio, into havens for the Midwest's native mussels. The project, similar to one conducted at the Genoa National Fish Hatchery in Wisconsin, will determine if researchers can transfer indigenous mussels into storage at donated lakes. Researchers are trying to determine which of the refuge's 150 lakes are suitable for the project, said Dr. Evan Blumer, a wildlife veterinarian at the facility. The study also could develop techniques for restocking rivers with native mussels, said Buddy Fazio, an endangered-species biologist with the U.S. Fish and Wildlife Service, which is splitting the study's \$17,000 cost with the Department of Natural Resources. Divers will be hired this fall or next spring to remove four common mussel species and transplant a few hundred of them after a quarantine period to determine that they aren't carrying any zebra mussel larvae. Half the ponds will be stocked with mussels; the other half will have fish carrying mussel larvae. Almost all

indigenous mussels require a fish host to spread their larvae, Watters said. The controlled outdoor ponds might become temporary emergency homes for native mussels while the zebra mussel explosion plays out, Fazio said. "The hope is to one day...put them back in their original places...It all depends on what the zebra mussels do." Source: Bill Bush, *The Columbus Dispatch*, 8/9/98

ND Chemical Pick Up - North Dakota officials have kicked off their "Project Safe Send" campaign in which state workers will pick up unused and banned farm chemicals for free and ship them out of state. Source: *USA Today*, 7/15/98 and National Journal's GREENWIRE, *The Environmental News Daily*, 7/16/98

Pigeon River Survey - Tests conducted in July by scientists monitoring the Pigeon River in Tennessee showed increases in the numbers of the river's aquatic species. The findings come seven months after the USEPA issued *Champion International* a new permit requiring the company's Canton, North Carolina paper mill to reduce its discharge into the river by 50% by 2001. Sources: *AP/Nashville Tennessean*, 7/10/98 and National Journal's GREENWIRE, *The Environmental News Daily*, 7/16/98

Red River Ammonia Discharge - A *Tysons Food* pet food plant in Texarkana, which was shut down last month for discharging excessive amounts of ammonia into the Red River, has reopened. The company has installed a new waste-water treatment plant along the river that will operate "virtually chemical-free". Source: *Arkansas Democrat-Gazette*, 7/22/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 7/24/98.

Reservoir Recreational Use - A federal panel is considering a new national designation for reservoirs to encourage more recreational use of "the fake lakes." The *National Recreation Lakes Study Commission*, created by Congress in 1996, is also studying whether new federal policies could increase recreation at the 1,782 federal reservoirs while maintaining their flood-control and irrigation functions and not harming the environment.

The panel expects to send a final report to Congress in 2/99. Sources: John Hughes, *AP/Portland Oregonian*, 9/7/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 9/9/98

St. Croix River Bridge - Minnesota Dept. of Transportation (MDOT) officials are seeking a stay of appeal of a judge's decision that blocked construction of a multi-lane highway over the St. Croix River, which is protected under the Wild and Scenic Rivers Act. The MDOT hopes to reach a compromise and eliminate the need for appeal. Source: Mary Devine, *St. Paul Pioneer Press*, 7/21/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 7/24/98

Strip Mine Wastes - The USEPA on 8/4 demanded that *Arch Coal Inc.* consider alternatives to filling in more than four miles of streams to dispose of waste from the largest strip mine ever proposed in West Virginia. Sources: Ken Ward, *Charleston (WV) Gazette*, 8/5/98 and National Journal's GREENWIRE, *The Environmental News Daily*, 8/6/98

Telephone Book Fertilizer - Applying shredded paper from non-recyclable phone books to farm fields may be a way of disposing of them while increasing crop yields and preventing soil erosion, report Kansas agricultural extension agents. Sedgwick County plans to grind down and apply about 70,000 telephone books -- or 10 tons of paper -- to crop land next spring. Sources: *Billings Gazette*, 9/10/98 and National Journal's GREENWIRE, *The Environmental News Daily*, 9/11/98

TN Water Plan: The state Dept. of Environment and Conservation and Cumberland County officials have unveiled a regional water plan to minimize dam building and protect free-flowing streams. Six utility districts plan to share water and infrastructure to address future water needs in the county with rapid growth and few reservoirs. Sources: Morgan Simmons, *Knoxville News-Sentinel*, 7/23/98 and National Journal's GREENWIRE, *The Environmental News Daily*, 7/28/98

VA DNA Testing - Virginia scientists plan to use DNA fingerprinting to find the source of water pollution and develop cleanup plans for a creek and wells in Rockingham County. A report to the Virginia Dept. of Environmental Quality by *University of Virginia* environmental engineer Shaw L. Yu found that Muddy Creek and 60 wells have unsafe levels of nitrates. Drinking water polluted with nitrates could lead to "blue baby syndrome," which can lead to brain damage and death from a lack of oxygen. As part of a 12 year plan to clean up 14 polluted sections of streams across Virginia, state officials will take samples of water that will be analyzed by *University of Washington* experts to determine the genetic characteristics of the bacteria. The samples will then be matched to the DNA makeup of chickens, cattle or other animals to find out what is causing the problem. By identifying what is polluting the water, cleanup plans can focus on reducing that particular source. State experts will first develop a plan to "attack" the bacteria and then focus on reducing nitrates. Sources: (Rex Springston, *Richmond Times-Dispatch*, 9/6). National Journal's GREENWIRE, *The Environmental News Daily*, 9/8/98

VA Trout/Acid Rain - One-third of all trout streams in Virginia are acidic at least part of the time, according to a study by *University of Virginia (UVA)* scientists. The study, funded by *Trout Unlimited* and several state agencies, also found that 6% of the contaminated streams are "chronically acidic," meaning they cannot support brook trout or other fish. If sulfur emissions from power plants are not reduced, the study predicts that by 2041 the number of impaired streams could rise to 35%. Art Bulgur, a senior research scientist at UVA and one of the study authors, said the impact on brook trout is particularly important because it is "one of the most acid-tolerant species." Bulgur said, "By the time the acids have had an effect on brook trout, it has already eliminated other species." The biggest component of acid rain in the state comes from sulfur deposits from power plants to the west of Virginia. Pollution from Ohio and West Virginia, which are ranked number one and six in terms of state sulfur dioxide emissions according to 1996 USEPA data, leaves sulfur deposits that cause aluminum to leach

into the streams and poison fish. The report said a 70% reduction in sulfur dioxide from 1990 emissions levels is required just to keep the rivers at their present condition. Sources: Ron Nixon, *Roanoke Times & World News*, 9/8/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 9/9/98

Water Craft Ban Stirs Controversy - The National Park Service (NPS) on 9/15 released newly proposed regulations that would ban personal watercraft (PWCs) in 62 of the 87 areas where motorized boating is currently allowed, but it refused to ban outright their use in 25 areas where they are "primarily" used. Under the proposed rules, PWCs would still be allowed at two national seashores and 11 national recreational areas, including Padre Island, TX, and Lake Mead, NV. PWC use would be reviewed over the next two years at 12 of the remaining 25 sites, including Cape Cod,



MA, and Fire Island, NY, with "an eye toward restricting -- or perhaps banning -- their use on a case-by-case basis". The NPS's proposal is "intensifying [the] aquatic culture clash between jet skiers, traditional boaters and shoreside spectators". Responding to complaints about pollution and noise from the PWCs, manufacturers are unveiling quieter, fuel-injected models. But at the same time, Jeff Hoedt of the *National Assn. of State Boating Law Administrators* predicts that states may begin to crack down on, or prohibit the PWCs in more areas. Washington state's ban on the watercraft in the San Juan Islands, which was upheld in July by the state Supreme Court, "could be the big opener for more

local bans," he said. In Lake Tahoe, officials are "shifting direction" in their effort to limit pollution from PWCs. The Tahoe Regional Planning Agency intends to scrap its proposed ban on two-cycle engines and replace it in 12/98 with "tough" regulations similar to ones in California that are designed to limit emissions. An editorial in the 7/13 *Vancouver (WA) Columbian* said, "If personal watercraft were exclusively personal, they wouldn't pose such a problem. ... The personal watercraft has become the cigarette of aquatic sports, and a lot of people are tired of being subjected to the secondhand smoke, noise, environmental problems and, sometimes, reckless behavior". Sources: Laura Bly, *USA Today*, 7/16/98; *AP/Las Vegas Sun*, 7/12/98; H. Josef Hebert, *AP/San Francisco Chronicle/Examiner* online, 9/16/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 7/16 and 9/16/98

Watershed Quality Standards Lawsuit - Lawsuits "demanding" that federal and state governments enforce the Clean Water Act by setting quality standards for all watersheds, and not just concentrate on point-source discharges, have been brought by environmental groups in 26 states and the District of Columbia, reports the *Washington Post*. Environmentalists are seeking to "limit pollution from a range of activities, including crop farming and logging." They are demanding a comprehensive approach to set "binding pollution 'budgets' for whole stretches of rivers, lakes and wetlands." Meanwhile, the *National Governors' Association* has adopted a policy urging Congress to give States more control over the implementation of water-quality programs. Agricultural groups have criticized the idea of such a broad program. Don Parrish of the *American Farm Bureau Federation* said, "You start trading the growth of municipal waste-water plants and factories against non-point sources [such as farms], and the EPA will control more of the U.S. economy through this environmental statute than any other on the books". Sources: Spencer Hsu, *Washington Post*, 8/9/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 8/5 and 8/10/98

Waterway Discharges - Industrial facilities across the country reported discharging nearly 1 billion pounds of toxic chemicals into U.S. waterways between 1992 and 1996, according to a report released in mid September by the *U.S. Public Interest Research Group* (USPIRG). The group compiled the report using information submitted by companies to the USEPA under the agency's Toxics Release Inventory (TRI). The group, however, asserted that due to "loopholes" in the TRI program, the total amount of toxics discharged into rivers and streams "may be many times greater" than the TRI reports. The ten most polluted waterways were the Mississippi, Ohio, Brazos, Savannah, Tennessee, Rock and Delaware rivers, plus the Connoquenessing Creek in Pennsylvania, the Pacific Ocean, and the Houston Ship Channel. More toxic chemicals were dumped into the Mississippi River than all other U.S. waters combined. The top three states for toxic discharges to waterways were Louisiana, Texas and Pennsylvania. Source: *USPIRG* release, 9/10/98 and National Journal's GREENWIRE, *The Environmental News Daily*, 9/11/98

Yellowstone Cutthroat Listing - Three environmental groups and one private citizen have requested that the U.S. Fish and Wildlife Service (USFWS) list the Yellowstone cutthroat trout as "threatened" under the Endangered Species Act. The groups -- the Missoula-based *Alliance for the Wild Rockies*, the *Biodiversity Legal Foundation* of Boulder, CO, and the *Montana Ecosystems Defense Council* -- say such a listing is warranted, citing USFWS data that show the fish have disappeared from nearly half of the streams they once inhabited in Idaho, Montana and Wyoming. But Idaho Dept. of Fish and Game officials say federal intervention is unnecessary because "they are already trying to protect" the fish. The federal Bureau of Reclamation said such a listing could affect the operations of eastern Idaho dams. The USFWS has 90 days to review the petition. Source: *AP/Billings Gazette*, 9/8/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 9/10/98

Yellowstone Mine Update - The White House announced an agreement on 8/7 that will end any chance of the *New World Mine* being opened adja-

cent to Yellowstone National Park. The property once owned by *Crown Butte Mines* has been formally transferred to the U.S. Forest Service, completing an acquisition effort that began in 1996. The firm last year gave up efforts to open the controversial mine in Montana a few miles from the park. And Congress last year agreed to spend \$65 million for the acquisition. But several issues, including an agreement to clean up pollution from past mining activities near Yellowstone, held up the transfer. Meanwhile, "constituencies that are not natural allies" are joining together to fight another proposed gold mine near the banks of the Blackfoot River near Lincoln, MT. Because of their "reverence" for the river, "writers and ranchers, conservationists and sportsmen and students and show-business types" are fighting the *McDonald Gold Project*, which they say could have "disastrous consequences" on the environment. Opponents fear the 8 mi.² gold mine, which would use cyanide to extract the gold, will "chew up the landscape" in "much the same way and nearly the same scale" as the *Berkeley Pit* in Butte, which is the result of more than a century of copper mining. John Maclean, whose father Norman wrote a *River Runs Through It*, said the mine could prove fatal to the Blackfoot's cutthroat, rainbow and brown trout that only recently have begun to flourish after years of conservation efforts. *Canyon Resources* denies the charges that left-over cyanide and other substances would leak from lined pools. And the company "boasts" that the mine will bring nearly 400 jobs to the area, with average salaries more than double the state's average; *AP/Salt Lake Tribune*, 8/8/98; Gwen Florio, *Philadelphia Inquirer*, 9/1/98 and National Journal's *GREENWIRE*, *The Environmental News Daily*, 8/10/98

Climate Change

Most Americans believe global climate change is real and damaging and that the federal government should take significant steps to avert it, according to a study released in July by *Resources for the Future*, a DC-based think tank. Although respondents generally expressed "widespread support" for federal efforts to

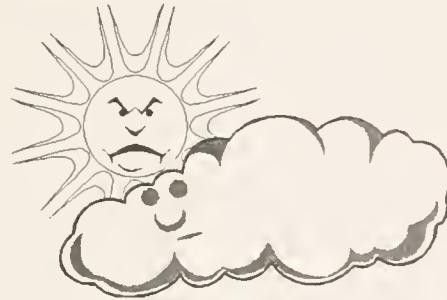
curb air pollution, they indicated "less willingness" to pay higher utility bills. The study also shows that:

- about 33% of respondents considered global warming either an "extremely" or "very serious" problem;
- 75% of those surveyed before the International meeting in Kyoto who identified strongly with the Democratic party "thought that global warming could happen in the future" as compared to 67% of those who identified strongly with the Republican party.
- After the Kyoto meeting 77% of strong Democrats believed in global warming compared to 55% of Republicans.

The study was conducted on a representative random sample of 687 adults from 9/1 to 10/5/97 and 725 adults from 12/20/97 to 2/13/98 by researchers from *Ohio State University*. The study was funded by the *National Science Foundation*, the USEPA and the National Oceanic and Atmospheric Administration (NOAA).

Meanwhile, major religious groups in the U.S. are "mounting an unusually broad and active campaign to persuade the Senate to approve" the Kyoto Protocol reports the *New York Times*. In a letter to the Senate and Pres. Clinton, 22 member churches of the *National Council of Churches* "pledged to work for the approval of the Kyoto Protocol," calling it "an important move toward protecting God's children and God's creation." The campaign includes many Protestant, Jewish and Greek Orthodox groups, and some evangelicals. But some conservative Christian groups, like the *Southern Baptist Convention*, are not participating. Roman Catholic officials "said they viewed global warming as a moral issue with profound importance for the world's poor, who stand to suffer the most from disruptions to the climate. But they said it would take time for American bishops to consider where they stand on the treaty's specifics." The *National Association of Evangelicals*, which has "largely stayed away from environmental issues," is planning to discuss them at a conference in 3/99. The campaign "reflects a determination among churches in the past decade to involve the faithful more

directly in matters like the disproportionate effect of pollution on poor people or the need to save endangered species."



Meanwhile, newly completed analyses by NOAA indicate that the average global temperature in July was 61.7 °F, about 1.26° above normal and nearly half a degree warmer than the previous all-time monthly record set in 7/97; and average global temperature for August was 61.4 °F, about 1.3° above the long term mean of 60.1°. August also broke the previous record of 61.1° set in 1997 and marked the eighth month in a row to set such a record. For the year to date, from January through August, the average global temperature of 58.5 °F was 1.3° above the long term mean of 57.2. The long term mean is based on data from 1880 to 1997. January through August 1998 was also the fifth wettest and fourth warmest on record. For the year to date, the nation has had 22.77 in. of precipitation. The normal for the period is 20.05 in. The wettest January through August was in 1979, with 23.34 in. of precipitation. The year 1934 was the warmest January through August with a record 56.9 degrees

NOAA's figures are based on land and ocean temperature readings collected from monitoring stations around the world. The land-based data indicates a "sharp" increase in warming over the last 15 years, with "many" of the hottest years on record occurring in the 1990s. Scientists say that when data is measured against temperature readings obtained from tree rings and glaciers, the decade's weather appears even more remarkable.

Preliminary temperature and precipitation rankings are available from NOAA on the World Wide Web at: <http://www.ncdc.noaa.gov/ol/documents/cvb.html>. Historical precipi-

tation and temperature ranking maps are also available on the Internet at: http://www.nic.fb4.noaa.gov/products/analysis_monitoring/regional_monitoring/usa.html. Information for the year to date can be found at: <http://www.ncdc.noaa.gov/ol/climate/research/1998/aug/aug98.html>. The long lead climate outlooks are available on the Internet at: <http://nic.fb4.noaa.gov>.

On another front, a report in the 7/15 issue of *Geophysical Research Letters* suggests that past studies on global climate change "slightly" overstate the role of carbon dioxide (CO₂) while understating that of some other chemicals. The actual contribution of CO₂ to global warming is about 15% less than that estimated by the *Intergovernmental Panel on Climate Change*, according to the report. But the study, led by Gunnar Myhre of the *University of Oslo*, Norway, concluded that other chemicals, including methane and nitrous oxide, have been under estimated. Jerry Mahlman, director of the *Geophysical Fluid Dynamics Lab* at *Princeton University*, said the finding "isn't a stunner, but it's an important contribution if it's true." Mahlman said the study would not "substantially reduce" the range of projected global temperature increases. For example, instead of an average increase of 1.5-4.5°, it could mean a range of 1.35-4.3°, he said.

Another new study shows that global warming could cause drier conditions on the northern Great Plains. Botanists at *Duke University* said they could not make precise predictions, but they said grasslands would likely expand eastward into areas now dominated by forests, "with a corresponding increase in wildfires." The *Duke* study, presented at the *Ecological Society of America* meeting in Baltimore, examined peat sediments, fossil pollen and charcoal deposits from ancient wildfires in an area encompassing parts of eastern Montana, the Dakotas, Nebraska, Minnesota and Wisconsin. "The region has flip-flopped between grasslands and forests during the past 8,000 years," depending on climatic conditions. Duke botanist James Clark said that the past 2,000 years have been relatively cool and wet, but that "there is good reason to believe it won't continue." Clark

said, "What's important is that the sensitivity is there to global warming. ... This system is really responsive." Other scientists said the plains' ecology is already quite different than it was in previous centuries in more ways than just temperature.

A study, published in the 9/1 edition of *Geophysical Research Letters*, observes increases in drought stricken parts of Africa and Asia, and an increase in both unusually wet and dry areas in Europe and the U.S., "though the overall trend was small." The analysis suggests the changes were due "largely" to the El Nino weather phenomenon, a periodic warming of the Pacific Ocean which alters weather around the globe. The report also says the trends "could all result partly from the greenhouse-gas induced climate changes." But "there's no overall strong trends that you would really want to put down as a climate change," said Kevin Trenberth of the *National Center for Atmospheric Research* in Boulder, CO, one of the report's authors.

Some scientists say a thawing trend in parts of Alaska, Canada and Russia "is one of the most telling signals that the planet's climate is changing," according to a feature in the 8/18 *New York Times*. Scientists "have confirmed" that many of Alaska's glaciers are retreating. The typically frozen ground in Alaska's interior is thawing, and parts of forests are "drowning" as the ground sinks beneath them, flooding them with "swamp water." Scientists are not certain about how much of the regional warming relates to the overall warming of the planet, with some saying the changes are "clearly the result of a change in prevailing patterns of atmospheric circulation" that began in the mid-1970s. Experts such as Gunter Weller of the *University of Alaska* at Fairbanks note that some areas in Russia that appeared

unaffected by the circulation changes have warmed just as much as Alaska. Other experts say the circulation change itself could have been triggered by global warming. "A number of experts" believe the regional thaw has resulted from a combination of natural and human-induced climate changes. "Whatever the combination of causes of Alaska's warming, the catalogue of effects is substantial".

Another new study, published in early August in the journal *Science*, has found evidence of global warming "centuries before industries began releasing large quantities of greenhouse gases into the atmosphere." The study found that lake water in equatorial Africa warmed by about 8° F between 250 BC and 450 AD, "reflecting a warming of climate in the region." A warming period during the same era has also been recorded in Lapland and Alaska, but the latest study was "important because it was conducted around the equator, a region that plays a crucial role in determining the climate system throughout the planet." Lead researcher Aldo Shemesh of the *Weizmann Institute of Science* in Israel said, "Our findings show that the climate can warm up suddenly without any connection to human activity." The study "could allow scientists to distinguish between natural climate variability and warming due to man-made factors." But Shemesh said the factors that triggered the warming remain unknown

According to a study published in the 8/20 issue of the journal *Nature*, small historical temperature increases in Antarctica preceded larger increases in Greenland by at least a millennium. The study, based on an analysis of methane in ice cores from both locations, "contradicts the hypothesis that Antarctic warmings are responses to events in the Northern Hemisphere," said Thomas Blunier of the *University of Bern* in Switzerland. The data sug-



gested that beginning about 47,000 years ago, temperature fluctuations in Antarctica started 1,000 to 2,500 years earlier than in Greenland. The researchers were not certain why the temperature swings were not more closely synchronized, but they "suspect the lag is linked to how the oceans slowly absorb and redistribute heat around the globe".

Meanwhile, a team of British scientists say the Earth's upper atmosphere has contracted or dropped by nearly 5 mi. in the past four decades, a decline they suggest is linked to human-induced, greenhouse-gas emissions. The findings of the *British Antarctic Survey*, published in the 9/98 issue of the *Journal of Geophysical Research* are based on 38 years of atmospheric measurements from research stations in the Falkland Islands and Antarctica. Although the scientists say the long-term atmospheric change is "apparently harmless," the shift "appears to be another signal that human activity is profoundly influencing the planet's climate."

Other evidence links global warming with an increase in illnesses worldwide. The *World Health Organization* reports that "quantitative leaps" in malaria outbreaks around the world and increases in cholera in Latin America and Africa have been the result of unusually heavy rains and flooding sparked by the weather phenomenon El Nino. In addition, the warm wet El Nino winter in the southern Rockies has produced abundant food and cover for deer mice, which transmit the deadly hantavirus to humans. However in a briefing to congressional staffers, Paul Reiter, chief of entomology at the *Centers for Disease Control and Prevention* called predictions of major outbreaks of diseases such as malaria and yellow fever misguided and alarmist. He said that "unless conditions deteriorate drastically," modern technologies such as insect screens, air conditioning and vaccinations would limit the spread of such illnesses.

On the economic front, climatologists have lately been meeting with bankers, traders and insurance managers concerned over record-breaking average high temperatures. Rising temperatures put more water into the

atmosphere, which "means record rainfall and more violent storms." In turn, insurance rates increase and the definition of "flood-prone areas" expands. Robert Quayle, head of the *National Climatic Data Center* in North Carolina, said climate change influences issues ranging from mortgage approval to bridge specifications and buildings' heating and cooling standards. But "some see opportunity" in climatologists' reports. Companies such as *Aquila Energy*, a unit of Kansas City-based *UtiliCorp United Inc.*, and New York-based *Natsource Corp.* trade in "weather derivatives." The device allows utilities and other companies to hedge against the possibility of an abnormal winter. For a premium paid in advance, traders will pay out a specified amount for each degree above or below what the climate center determines is normal weather. Climate issues "have also kicked off a new political tempest" over 100-year flood maps made by the Federal Emergency Management Agency. Ben McNitt of the National Wildlife Federation asserts that FEMA's maps "are not accurate in a large number of cases" and the Army Corps of Engineers is using out-of-date information when developing dams and levees.

Sources: *Resources for the Future* release, 7/28/98; William Stevens, *New York Times*, 8/10/98; Ruth Larson, *Washington Times*, 7/29/98; John Fialka, *Wall Street Journal*, 8/12; AP/San Francisco Chronicle/Examiner online, 8/4/98; Randolph Schmid, AP/San Francisco Chronicle/Examiner online/others, 8/21/98; (William Stevens, *New York Times*, 8/18/98; London Telegraph/Washington Times, 8/15/98; AP/Boston Globe, 8/20/98; David Miller, NOAA Constituent Affairs, 9/15/98; Joby Warrick, *Washington Post*, 9/17/98; Randolph Schmid, AP/Tulsa World, 7/11/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 7/14, 7/29, 8/4, 8/5, 8/10, 8/12, 8/17, 8/18, 8/20, 9/11 and 9/17/98

Another Mussel Sting

A multi-state poaching investigation that began in Ohio has led to a \$1 million settlement from a Tennessee company that purchased thousands

of pounds of illegally obtained freshwater mussels. The U.S. Attorney for the Western District of Tennessee, Veronica Coleman, said that Camden-based *Tennessee Shell Co.* had pleaded guilty to purchasing thousands of pounds of illegally obtained mussels. The firm, a subsidiary of *Kogen Trading Co.* of Japan, is the largest shell-buying company in the U.S.

The \$1 million restitution payment from the firm will go to the *National Fish and Wildlife Foundation* to be used for mussel research. Of the 80 types of mussels once found in Ohio, five are extinct and 11 are no longer found in the state. With the invasion of foreign zebra mussels already threatening indigenous mussels, poaching has become a more serious crime, Randy Sanders, Ohio Dept. of Natural Resources said. As mussels have become more scarce in Tennessee and Alabama - states where harvesting is legal - poachers have headed into northern rivers. The price of shells in the Southern states had begun to rise, from \$2/lb. to \$3 and eventually to \$13/lb. in the early 1990s, said Andrew Pierce, a special agent with the U.S. Fish and Wildlife Service.

The trail of the investigation began with Ohio Division of Wildlife officials on the Muskingum River, near Marietta, in 1993. Poachers were spotted and watched, and when they crossed into West Virginia, federal wildlife authorities were called in, said James Baker, an investigator with the division. After arrests were made, the poachers began cooperating with authorities, and the investigation spread into Michigan and eventually to Tennessee. The poachers are not just weekend novices trying to make an extra buck, Baker said. Many of the people arrested in the probe were licensed to harvest mussels in other states and used expensive scuba gear and special tools to get in and out of rivers quickly.

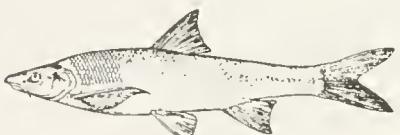
Several of the people arrested had several thousand dollars in cash on them, which Baker suspects was for bond money in the event they were caught. In Ohio, removing mussels is a misdemeanor, "but what we are really looking for is forfeiture of equipment," which can include vehicles, Baker said. However, the crime is a

felony under federal law, with fines up to \$250,000, Pierce said. By going after the buyers, authorities are trying to cut off the poachers' market. "If they can't sell them, there's no reason for them to come up" to the northern states, Pierce said. The investigation resulted in 20 indictments and 20 guilty pleas, he said.

Source: Bill Bush, *The Columbus (Ohio) Dispatch*, 7/25/98

Missouri River Chub Survey Completed

The objectives of the Missouri River Chub Survey, funded through MICRA, were to compare the abundance of selected Missouri River chubs and minnows to historical data and to compare seining and bottom trawling efforts in the Lower Missouri River. Nine of thirteen historic collection sites and two new sites were seined and trawled during July and August 1997. Higher than average river levels prevented sampling three historic sites between Kansas City and the Iowa border. Sixty sicklefin chubs (*Macrybopsis meeki*), 29 sturgeon chubs (*M. gelida*), and 676 plains minnows (*Hybognathus placitus*) were collected. No flathead



"flathead chub"

chubs (*Platygobio gracilis*) or Western silvery minnows (*Hybognathus argyritis*) were collected. Benthic trawling was more successful in capturing sicklefin chubs and sturgeon chubs, while seining was the more effective technique in catching plains minnows. The chub and minnow community of the Lower Missouri River may be more adequately sampled when using a combination of shallow water and benthic gears.

Analysis of sampling data from 1944 to 1997 indicated a decline in the presence of flathead chubs and Western silvery minnows and an increase in the presence of sicklefin chubs. The probability of collecting sturgeon chubs remained stable over time. Results of trend analysis in plains

minnow data were less clear. Plains minnows declined from 57% of total catch in 1940-45 to 0.1% of total catch in 1994 but rebounded to 15% in 1997. Copies of the complete survey text are available from the authors.

Source: Grady, J.M. and J. Milligan. 1998. *Status of Selected Cyprinid Species at Historic Lower Missouri River Sampling Sites*. U.S. Fish & Wildlife Service, 608 East Cherry, Columbia, MO 65291. 47 pp. + Table.

Triploid Black Carp for Snail Control

At a recent Triploid Grass Carp meeting in Memphis it was learned that aquaculture promoters will soon be promoting triploid black carp for snail/yellow grub control in aquaculture ponds. It seems likely that requests for farm pond stocking will not be far behind. In the meantime, sources say that many states do not have the black carp on their list of "permit required" species, but should take efforts to include them as soon as possible.

The potential magnitude of the problem was characterized by an article in the May/June 1996 issue of *Aquaculture Magazine* : "The Chinese Black Carp: A Potential Biological Control For Snails In Warmwater Fish Production Ponds". According to the article, the Chinese black carp or snail carp (*Mylopharyngodon piceus*) has been used for a number of years to control snails, mussels, and clams in a number of water habitats such as irrigation ditches, manmade reservoirs, and natural bodies of water. Aquaculturists hope to use the carp to reduce snail numbers, along with the parasites for which they serve as the intermediate host, in warmwater fish production ponds.

The black carp's native range includes the major Pacific drainage's of eastern Asia including the Amur, Yellow, Huai, Yangtze, and Pearl rivers in China, parts of eastern Russia, and possibly North Vietnam. The external appearance of the Chinese black carp closely resembles that of the grass carp (*Ctenopharyngodon*

idella). The head is pointed, and scales are large and circular. The mouth is arc shaped in the front. The color of the body is dark brown. The mouth parts consist of pharyngeal teeth and a callous pad. This equips the fish to crush snails, mussels, and clams.

The diet of the black carp is varied depending on the size of the fish. Young fry primarily feed on zooplankton such as rotifers, copepod nauplii, and cladocerans. Older fry feed on ostracods and aquatic insects. The major food of young-of-the-year fish is Chironomid larvae (midges). After the fish reaches two years of age and (typically) weighs more than a pound, the diet includes mollusks, oligochaetes (worms), aquatic macrophytes, larval insects, and large zooplankton. After the black carp reaches an adult size in the wild, their diet is almost exclusively mollusks and snails because of the masticating (grinding/crushing) apparatus of the pharyngeal teeth. When available as in aquaculture, the fish readily eat pelleted fish feeds.

The spawning habits of the black carp are similar to the other common Chinese carps (grass, bighead, and silver). The spawning site is in large, fast flowing rivers. The eggs are deposited in open water and remain suspended in the flowing water until they hatch. The eggs will hatch in approximately 1.5 days at water temperatures of 70-75 °F. When fish are artificially spawned at an aquaculture facility, hormone stimulated females are manually stripped of their eggs, fertilized by the milt of a male, and the eggs are placed in hatching cones or hatching jars. In China, several pairs are hormone injected and placed in vats to spawn, after which the fertilized eggs are collected and placed in hatching devices. Black carp will reach sexual maturity in 6-11 years and will weigh 13-20 lbs. Fish producers have stocked 5-10 black carp/acre and have reported good snail control.

Biologists say there is absolutely no doubt that the black carp will escape and become another nuisance aquatic species if the aquaculture industry begins extensive propagation. For example, several hundred black carp, reportedly, escaped from *Osage Fisheries* in Missouri during the 1993

flood. There are no reports of recaptures to date, but this is not particularly surprising, since it often requires several generations for a new species introduced in small numbers to begin showing up in the fishery. The same was true for grass, bighead and silver carp. These species were present in the wild for 10-20 years after escapement before populations suddenly seemed to explode to current levels.

The Department of Agriculture and the Aquaculture Industry should be encouraged to investigate the use of some of our native warm water fishes such as freshwater drum and redear sunfish for snail control.

ANS Concerns/Symposium Web Site

Cornell University biologist David Pimentel calculates that alien species cost the U.S. \$122 billion/yr. According to an article in *Newsweek* the White House has become concerned about ANS issues and is planning to issue an executive order this fall requiring federal agencies to assess the problems caused by invasive species and coordinate control measure reports.

Interior Secretary Bruce Babbitt has called for a national strategy to be led by Vice President Al Gore to address problems caused by non-native weeds. A study in the 8/98 issue of *BioScience* ranked invasive species as second only to habitat destruction as the most common reason for species loss nationwide. For example, more than 95% of the 282 imperiled plants and birds in Hawaii are threatened by aliens, which is "more than by hotels on the sand dunes." San Francisco Bay has 234 alien species, with one being added every 14 weeks, which constitute as much as 99% [by weight] of its marine life. Most of the species are introduced by the release of ballast water by ships at port.

A study by scientists at the *Smithsonian Institution, Nature Conservancy and Environmental Defense Fund (EDF)* examined threats to 1,880 rare plant and animal species and found that 49% were being "squeezed out" by non-native spe-

cies. The study also found that many invasive species have been accidentally imported by "an increasingly mobile human population." It cited zebra mussels and fire ants, the former which arrived in the U.S. in ship ballasts, as two such examples. The EDF's David Wilcove says the study shows that "simply protecting habitats from further development won't do the trick for most of our endangered species".

A host of invasive species threatens to alter the ecosystem surrounding the Tennessee River, according to a plant ecologist at *Chattanooga State University*. Richard Clements says that the dogwood anthracnose fungus, which entered the U.S. via Asian dogwoods 30 years ago, is slowly killing native forest dogwood in the Chattanooga region. The demise means a loss of winter food for a host of birds and mammals, he says. Foreign plants such as Japanese honeysuckle, privet hedging plants and mustard garlic are also taking over in the region's forests, while hydrilla and zebra mussels are altering the Tennessee River ecosystem.

Government officials say the nation's public natural areas are being lost to invasive species at an estimated rate of 4,600 acres/day. Over one year, an area about the size of Delaware is lost. To combat invasive weed species in Teton County, WY, home to Grand Teton National Park, county officials have adopted 86 goats to dine on noxious weeds. *Ewe-4-ic Ecological Services* of Fort Collins, CO, raises the animals and provides them to officials as an alternative to chemical pesticides.

In New Mexico a company has developed a way to keep invasive zebra mussels from the hulls of boats and pipes by using a repellent made with a nontoxic chili additive. The *New Mexico Tech Research Foundation* mixes the additive into paints, glues and caulk. Chris Boes of the Coast Guard says that if the repellent passes USEPA testing this fall, "it's going to be a real hot item".

In California the state senate on 8/17 approved a bill that would increase the penalty for releasing non-native aquatic species or plants into state waters from \$1,000 to \$50,000.

Fordham University paleoecologist David Burney says the "only real hope" to stave off aliens is through prevention measures like laws forbidding the import of exotic species, inspection programs, and to outlaw ballast water releases. Burney said, "Once you homogenize the biodiversity of the world, there's no turning back".

Meanwhile, the Ohio Department of Natural Resources and MICRA will be co-hosting an *Aquatic Nuisance Species Symposium* at the *60th Midwest Fish and Wildlife Conference* in Cincinnati in early December. As part of the symposium MICRA will provide a presentation on the present magnitude of aquatic nuisance species problems within the Mississippi River Basin. Jerry Rasmussen, MICRA's Coordinator/Executive Secretary will make the presentation based on input from MICRA's member states, providing insight into the potential for spread of aquatic nuisance species problems across the Basin. MICRA has also been asked by the *National Aquatic Nuisance Species (ANS) Task Force* to join the group as an exofficio member representing Mississippi River Basin concerns.

For additional information on aquatic nuisance species in the U.S. contact the ANS Task Force Web Site at: <http://www.ANSTaskForce.gov>.

Sources: Bob Peoples, *Aquatic Nuisance Species Task Force*, Washington, D.C.; *Washington Post*, 7/27/98; Sharon Begley, *Newsweek*, 8/10/98; A. J. Hostetler, *Richmond Times-Dispatch*, 8/6/98; Pam Sohn, *Chattanooga Times*, 8/17/98; *AP/Billings Gazette*, 8/16/98; Derrick Henry, *Austin American-Statesman*, 8/15/98; *AP/Contra Costa [CA] Times*, 8/18/98; and *National Journal's GREENWIRE, The Environmental News Daily*, 7/27, 8/6, and 8/20/98

Officials' Enviro Affiliations Probed by Congress

House Resources Committee Chair Don Young (R/AK) in July asked the Dept. of Justice and the U.S. Forest Service (USFS) to turn over information about its employees' affiliations with environmental groups as part of an investigation of lawsuits over en-

dangered species in the Southwest. Young was interested in learning whether or not any employees were members of or had given money to the Santa Fe-based *Forest Guardians* or the Tucson-based *Southwest Center for Biological Diversity*. Young also requested names of employees who are involved in endangered species litigation in the region who have "environmental ties."

Justice Dept. lawyers were involved in negotiating a settlement between environmental groups and the USFS limiting grazing in Arizona and New Mexico. The letter came after ranchers said they were shut out of the USFS decision to limit grazing.

In a 9/17 response to Young, USFS Southwest Regional Forester Eleanor Towns said, "it's nobody's business" if its employees are members of environmental groups. She said further, "The Forest Service does not track the membership of employees in organizations, and in fact the (federal) Privacy Act prohibits the agency from maintaining records of such First Amendment information".

The scope of Young's inquiry sparked agitation among environmentalists and at the Agriculture Dept., which oversees the USFS:

- *Wilderness Society* Pres. William Meadows said, "What's next, library records?"
- USDA spokesperson Tom Amon-tree, who said the USFS carries out policy "without regard to individual beliefs," asserted that First Amendment protections bars the department "from hauling in our employees and interrogating them about their personal interests".
- A *Lewiston [ID] Morning Tribune* (8/10) editorial said, "[I]t is mystifying how someone so unaware of Americans' basic constitutional rights could be entrusted with a chairmanship as important as Young's".
- The *Santa Fe New Mexican* (8/12) said, "As for forest rangers belonging to [environmental groups], that's their right as citizens of the nation Young represents in Congress."
- *Forest Guardians* President Sam Hitt said, "I think Don Young is the Joe McCarthy of the 1990s. Anyone who stands up for the environment,

Don Young brings to his knees."

- A *Tucson Arizona Daily Star* editorial (8/8) said Young's inquest "represents one more disturbing, but routine, incident of congressional disrespect for environmental laws and their enforcers. In a word, Young finds worthy of a hostile investigation the fact that a federal agency moved to follow the law".



In the meantime, federal agents have "accused" another USFS official of accepting gifts and free trips from private interest groups that "pushed through millions of dollars worth of land swaps at a national forest in Nevada." A draft audit cites a "wide range of improper dealings" involving at least \$27.9 million and 7,000 acres of land swaps at the Humboldt-Toiyabe National Forest, according to excerpts obtained from the *Association of Forest Service Employees for Environmental Ethics*, an employee watchdog group based in Eugene, OR.

"In response to the audit," USFS Chief Mike Dombeck suspended the local managers' authority to approve land exchanges at the Nevada forest and increased scrutiny of land exchange proposals nationwide, his spokesperson Chris Wood said. The official is not named in the draft audit, which was written by the Agriculture Dept.'s Office of Inspector General. The agency has referred part of the case to the Justice Dept. for "possible criminal prosecution".

Sources: Valerie Richardson, *Washington Times*, 8/14/98; Al Kamen, *Washington Post*, 8/14/98; AP/*Washington Post*, 8/2/98; Keith Easthouse, *Santa Fe New Mexican*, 9/22/98; and *National Journal's GREENWIRE*, *The Environmental News Daily*, 8/3, 8/10, 8/14, 8/25

and 9/23/98

Environmental Pessimism

Although an "overwhelming majority" of Americans say they are concerned that environmental damage will have a "significant" impact on human well-being, less than 25% believe effective action will be taken to ensure a healthy environment in the future, according to a poll released by the *World Wildlife Fund*.

About 66% of respondents said they felt their communities were on the right track to ensuring a healthy environment, compared to 56% who thought the U.S. was on the right track. But only 35% said the world as a whole was headed in the right direction on environmental protection. Eighty percent of the respondents said they were aware that environmental issues like deforestation, global climate change and pollution affect human health, and 72% said they believe that if effective action is not taken, their own quality of life will deteriorate.

Americans tended to divide responsibility for addressing environmental problems equally among business (36%), government (33%), and individuals (31%). Seventy-nine percent said they believed small actions taken by individuals can make a difference. But 49% said their own actions would make a difference on such issues as global warming and deforestation. And 66% said few people are willing to change their behavior or pay for stronger environmental protection. The poll was based on a random telephone sampling of 1,017 American adults between 7/31 and 8/4. Its margin of error was +/-3%.

According to a *Wall Street Journal/NBC News* poll conducted in mid September, "Democrats have widened the already big gap with Republicans on the question of which party would do a better job ... protecting the environment.". The poll of 2,005 Americans shows that 45% of respondents said Democrats do a better job on protecting the environment, while 12% of respondents said Republicans do a better job. In a 10/93 *WSJ/NBC News* poll, 44% of respondents said Democrats do a

better job, while 15% said Republicans do.

Sources: *World Wildlife Fund* release, 8/21/98; Jackie Calmes, *Wall Street Journal*, 9/17/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 8/21 and 9/17/98

Natural Controls

Many countries that have been struggling with the environmental impacts of population growth such as deforestation, soil erosion and aquifer depletion "are showing signs of demographic fatigue," according to a report released on 9/26 by the *Worldwatch Institute*, a DC-based think tank. Recent U.N. projections indicate the global population will hit about 9.4 billion in 2050. But due to AIDS, "ecological collapse and social chaos" some African countries may begin experiencing zero population growth in just a few years "not because of falling birth rates, but because of rapidly rising death rates," says *Worldwatch*.

For example, "barring a miracle," some African countries will lose 20% or more of their adult population within the next decade from AIDS alone. *Worldwatch* Pres. Lester Brown said, "The question is ... whether [population growth] will

slow because societies shift to smaller families or because ecological collapse and social disintegration cause death rates to rise".

Groups such as DC-based *Population Action International* "are concerned the new projections will be viewed as support for the cynical view that the world's problems will take care of themselves no matter what humans do".

Sources: *Worldwatch* release, 9/26/98; David Briscoe, *AP/Boston Globe*, 9/27/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 9/28/98

Americans for the Environment Web Page

The following information is available from the group *Americans for the Environment* (AFE) Web Page (AforE.org):

- Legally Permissible Political Activities for 501(c) 3 tax-exempt groups;
- Ballot Measure Information and Resources with an environmental point of view;
- Online Seminar - A brief sample of an AFE Workshop, with morning and afternoon sessions;
- Resource Library;
- Conservation Ballot Measure Election Results 1990-1996;

- Conservation Ballot Measure Analysis and Expenditure Ratios;
- The \$50,000 Club 1992 Corporate Opposition to Conservation Measures;
- Ballot Measure Case Studies;
- State Initiative & Referenda Map, Resource Groups and Bibliography;
- State Officials Contact List and State Election Division links;
- Sharpening Your Electoral Skills;
- Case Studies;
- Prop Watch '98 - A service provided by AFE for citizens who are interested in tracking selected ballot measures;
- AFE Publications - Training and public education publications for use in conjunction with AFE workshops and as resource material for individuals. Ordering and payment information is now available online;
- Political Skills Directory;
- Political Skills Web Sites - Includes a calendar of AFE workshops, events and related activities;
- Institutional Information - A brief history of AFE along with mission statement, vision statement, board of directors, and national advisory council;
- AFE's Long-Range Plan Financial Information.

Source: *Americans for the Environment*, 1400 16th Street, NW, Box 24, Washington, DC 20036, (202) 797-6665, FAX: (202) 797-6563, afedc@igc.org, <http://www.AforE.org>

Meetings of Interest

November 16-18: Incentives for the Protection of Nature, Savannah, GA. Contact: Bill Coleman, Manager, Biodiversity Protection R&D, EPRI, 3412 Hillview Avenue, Palo Alto, CA 94304, (650) 855-1084.

December 6-9: 60th Midwest Fish & Wildlife Conference, Hyatt Regency Hotel, Cincinnati, OH. Conference includes symposia on Sediment Dynamics in Stream and River Ecosystems and Development of State Management Plans for Aquatic Nuisance Species. Contact: Gary Isbell, Ohio Division of Wildlife, 1840 Belcher Drive, Columbus, OH 43224, (614) 265-6345, FAX (614) 262-1143, gisbell@dnr.state.oh.us.

December 6-10: Hydrophobic Organic Compounds in Rivers, San Francisco, CA. Contact Valerie Kelly (vjkelly@usgs.gov) or Kathy McCarthy (mccarthy@usgs.gov), USGS, 10615 SE Cherry Blossom Drive, Portland, OR 97216, (503) 251-3244.

March 21-24: Sustaining the Missouri River for Future Generations, Ramkota Inn River Centre, Pierre, SD. The conference provides a forum for researchers, resource managers, and citizens from all river interests to discuss the future of this unique river system. Contact: Jeanne Heuser, USGS-BRD, Environmental and Contaminants Research Center, 4200 New Haven Road, Columbia, MO 65201, (573) 876-1876, FAX (573) 876-1896, jeanne_heuser@usgs.gov.

May 23-28: 10th International Soil Conservation Organization Conference - Sustaining the Global Farm, Local Action for Land Stewardship, Purdue University, West Lafayette, IN. Contact: Mark Nearing, Purdue University, 1196 SOIL Bldg., West Lafayette, IN 47907-1196, (765) 494-8673, FAX (765) 494-5948, isco99@ecn.purdue.edu.

May 16-19: National Watershed Coalition's Sixth National Watershed Conference, Austin, TX. Conference theme is "Getting the Job Done at the Ground Level". Contact: John W. Peterson, Executive Director, National Watershed Coalition, 9304 Lundy Court, Burke, VA 22015-3431, (703) 455-6886, FAX (703) 455-6888, jwpeterson@erols.com.

Congressional Action Pertinent to the Mississippi River Basin

Endangered Species

Efforts to pursue S. 1180, the Endangered Species Act (ESA) - S. Rpt. 105-128 continue. On 9/17, both the Republican and Democratic leaderships "hotlined" S. 1180, asking their members to report back with likely amendments. Sens. Dirk Kempthorne (R/ID), John Chafee (R/RI) and Max Baucus (D/MT), three of the original co-sponsors, have been working to bring the bill up, but so far have been unable to squeeze it in over the squabbles over other major policy initiatives. An effort to bring the ESA bill up as an amendment to the fiscal 1999 Interior appropriations bill (S. 2237, S. Rpt. 102-227) was close to success until a fight over unrelated legislation derailed that bill on 9/16.

Kempthorne, the chairman of the drinking water, fisheries and wildlife subcommittee of Senate Environment, has invested a good deal of his time in moving S. 1180, and is retiring at the end of this Congress to run for governor of Idaho. S. 1180 cleared Senate Environment a year ago on a vote of 15-3 with the endorsement of the Clinton Administration. Sources said that while Interior Secretary Bruce Babbitt continues to fight for the bill other senior administration officials are less enthusiastic, and were particularly

unwilling to see it added to the Interior funding bill, which is under a veto threat partly because of other legislative language that the administration considers objectionable.

Kempthorne and his co-sponsors have spent much of the time since the Environment Committee approved the bill negotiating with Majority Leader Trent Lott (R/MS) over his concerns. These talks led Kempthorne to propose four amendments, mostly relating to private landowners' participation in species conservation and recovery efforts.

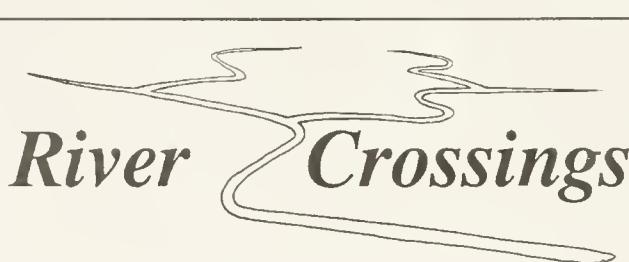
Environmental groups say S. 1180 would weaken the ESA and reduce protection for species on the brink of extinction. Private property rights groups, on the other hand, are distressed that it does not include a requirement for the government to compensate landowners for endangered species protection activities that diminish property values. That language was incorporated into a second bill (S. 1181) introduced by Kempthorne with no co-sponsors.

Numerous amendments relating to environmentalists' concerns about the bill's provisions on habitat conservation agreements, species recovery requirements, consultation

between federal agencies and other issues are expected, as are efforts to add private property and water rights language.

Efforts to bring up S. 1180 as an amendment to the Interior bill also did not sit well with the *American Farm Bureau Federation*. In a 9/15 letter to senators, President Dean Klecker said the federation opposed that tactic and listed six changes - including compensating landowners for decreased property values, setting a trigger for delisting species, and more consideration of adverse economic and social impacts of recovery plans - that the group wants to see. The *Federation* also wants "normal agricultural activities" exempted from the provisions of the ESA requiring federal agencies to consult with the U.S. Fish and Wildlife Service for the National Marine Fisheries Service before allowing those activities. And the *Federation* wants farmers enrolled in conservation agreements for species habitat to be spared penalties if they accidentally harm a listed species. "Unless the indicated changes are made to any amendments offered, we ask that you oppose" S. 1180, Klecker said.

Source: Leslie Ann Duncan, *Congressional Green Sheets, Environment and Energy, Weekly Bulletin*, 9/28/98



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River Crossings

Volume 7 Number 6
November/December 1998

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Season's Greetings

In behalf of MICRA we'd like to wish all of our readers and friends a joyous holiday season, and all the best for the new year. And, may the winds of change bring new opportunities in 1999 to restore and conserve our important river systems.



Reader's Survey

With this issue *River Crossings* celebrates the end of its seventh year of publication, and in keeping with past tradition we are conducting our bi-annual Reader's Survey. Please note the insert provided with this issue. We'd like to know what our readers think and would appreciate very much if you would take the time to complete the survey and mail it back to us by the end of January.

We continue to provide *River*

Crossings, free of charge and your opinions are important to us in keeping the publication of high quality and value to our members and friends. Thanks in advance for your continued support and cooperation!

Missouri River Master Manual Meetings

Late this summer and fall the Corps of Engineers scheduled 13 workshops up and down the Missouri River Basin to discuss future plans for Missouri River water management. On the same days they held public meetings to review the draft plan for operating the river in the coming year. Long-term revision of the Corps' Missouri River Master Water Control Manual, in the works for about nine years, will determine which river

users get water and when and how the Corps responds to the threat of drought or floods. The Corps' plans started with 64 alternatives which were boiled down to the eight options being discussed at the public meetings.

Three of the alternatives would vary the amount of water to be held in large reservoirs in Montana, North Dakota and South Dakota for protection against drought. Three others would offer additional releases from Gavins Point Dam near Yankton, SD in the spring and summer for fish and wildlife, and one would provide additional water to supplement the heavily trafficked Mississippi River during dry times. One is the same plan the Corps now uses.

Paul Johnston, a Corps spokesman for the Missouri River Regional Office in

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Omaha said the Corps is looking for an option, possibly a hybrid of the eight, that river users can agree on. But Chad Smith, Missouri River regional representative for *American Rivers* and chairman of the *Missouri River Coalition*, said the Corps failed to include in its options one that would provide for a split barge navigation season - one that provides water to float barges in the spring and fall, but lowers the river in the summer.

That's the way the river used to run, Smith said, and that's what fish and wildlife need. Lower water in the summer also would expose sandbars for boaters and other recreationists. "Until they seriously consider a split navigation season and incorporate a spring rise, you're not going to get an alternative that's acceptable to anyone who's concerned about the environment or recreation," Smith said.

That kind of schedule also would match what farmers say they need for barges - flows to carry fertilizer north in the spring and grain south in the fall, he said. *American Rivers* has backed away from its stance calling for navigation to be shut down entirely. The group once argued that the limited amount of traffic on the river wasn't worth maintaining navigation flows or the rock-lined river channel. Johnston said his agency must consider all uses of the river, not just wildlife, when writing its management plan. He said further that the value of fertilizer and grain moved during the spring and fall may be higher, but navigation traffic is fairly even throughout the spring-to-fall season.

Adding to *American Rivers* concerns, environmental critiques attending meetings held in New Orleans, told the Corps that the proposed Master Water Control Manual changes do not address how the Missouri River's sediment could be used to rebuild wetlands in Louisiana and how to better control agricultural nutrients that may be helping to create the annual Dead Zone in the Gulf of Mexico. Spokespersons for two environmental groups told Corps officials they're concerned the seven alternative proposals under consideration do not adequately address the changes they would make in the flow and content of the Mississippi River as it runs through Louisiana.

Officials with the *Mississippi River Basin Alliance* (Alliance) -- which represents 105 environmental groups from New Orleans to Minneapolis -- and the *Coalition to Restore Coastal Louisiana* (CRCL) said the Corps proposals don't consider the effects of the recommended alternatives downstream of St. Louis. "It's very clear that their idea of the Missouri River is what runs by their water control structures and what happens after the water empties into the Mississippi is someone else's problem," said Mark Davis, executive director of the CRCL.

"The Corps has said at a number of meetings that they are the new and better Corps, that they think in terms of ecosystems," said Darryl Malek-Wiley, president of the *Alliance*. "But the ecosystem of the Mississippi River includes the Missouri, and they aren't thinking of how

the Missouri impacts the Mississippi." Both organizations are concerned about the plans' effect on sediment and nutrients carried downstream to Louisiana. Three of the plans designed to benefit fish and wildlife would significantly increase the amount of water released from the six reservoirs during spring and summer months. However, Corps officials said that in studying those proposals, no research was done on whether that increased flow would add nutrients to the Mississippi River and eventually to the Gulf of Mexico.

Spring flood waters from the Mississippi that are rich in nutrients are believed to be one of the causes of the huge "dead zone" -- an area of water containing very low dissolved oxygen -- that forms along the Louisiana coastline each spring and summer. The lack of oxygen causes fish and shrimp to avoid the area, which has

River Crossings

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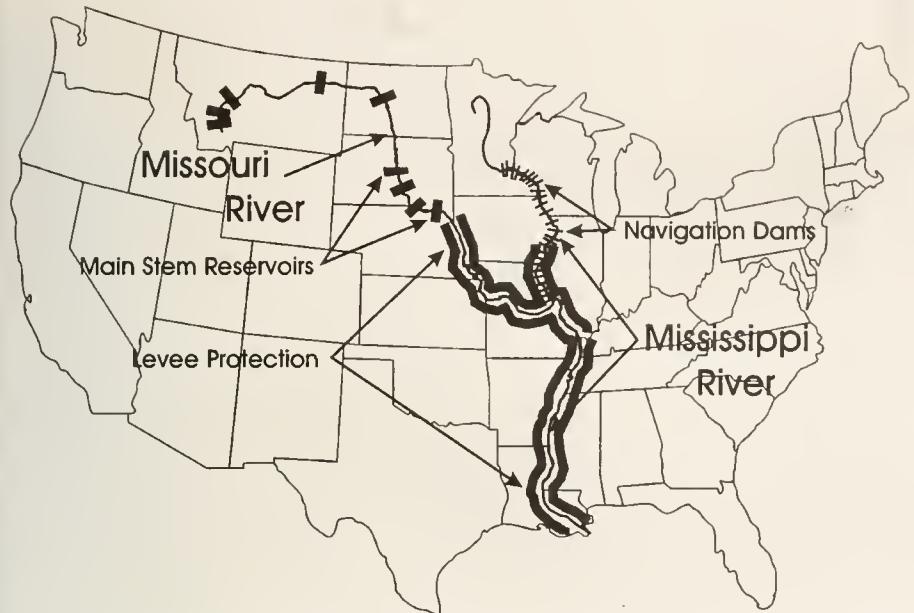
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River Crossings is a mechanism for communication, information transfer, and coordination between agencies, groups and persons responsible for and/or interested in preserving and protecting the aquatic resources of the Mississippi River Drainage Basin through improved communication and management. Information provided by the newsletter, or opinions expressed in it by contributing authors are provided in the spirit of "open communication", and do not necessarily reflect the position of MICRA or any of its member States or Entities. Any comments related to "River Crossings" should be directed to the MICRA Chairman.



Map of the Missouri and Mississippi Rivers showing the extensive system of mainstem dams, flood control reservoirs, and levees which impact sediment transport to the Gulf of Mexico. A similar system occurs on other major tributaries and in much of the watershed.

been as large as 7,000 square miles during some summers, and kills organisms that live on or in bottom sediments.

Malek-Wiley said the failure of the Missouri River Plan to address down-river nutrient problems goes beyond concerns about use of fertilizers on farmland in the River's watershed. "We're also starting to see new large animal feedlots established along the Missouri," he said. "They haven't made the link between discharges from those feedlots and water quality, especially the nutrient issue." Under all the alternatives, officials expect continued erosion problems within the Missouri River Basin. But the water leaving the final dam on the river contains little of the sediment that the River's tributaries have collected, said Albert Swoboda, an engineer with the Corps. That sediment is carried into the six lakes formed by the dams, where it falls to the bottom.

Louisiana wetland restoration planners have long been concerned that the dams along the Missouri, upper Mississippi, and Ohio rivers and their tributaries have dramatically reduced both the amount and size of sediment particles that reach Louisiana. The dams and the reservoirs they create cause larger sediment particles to fall out in

the slower-moving water, and result in much smaller particles making their way to the Gulf of Mexico. The result is that it may take much longer to build new wetlands.

Davis said that in writing their water plan, Corps officials apparently ignored a provision of the *Coastal Wetlands Planning, Protection and Restoration Act* -- the *Breaux Bill* -- that requires all federal agencies to find ways of linking other projects to the restoration of wetlands in Louisiana. "They should be thinking of sediment not as a problem, but as a resource," Davis said. "They should be thinking about nutrients not as a local issue, but about the ability of the system down river to use and handle them."

The Corps still must conduct a formal environmental impact study of their proposals, during which they will identify the best alternative and solicit additional public comment. That study is expected to begin early next year. The Missouri and its tributaries drain parts of nine states before joining the Mississippi at St. Louis (See Figure above). The River has six major dams that form reservoirs used for recreation, drinking water and the production of electricity. Much of the River also is used for navigation,

especially by barges that often begin their trek upriver in Louisiana.

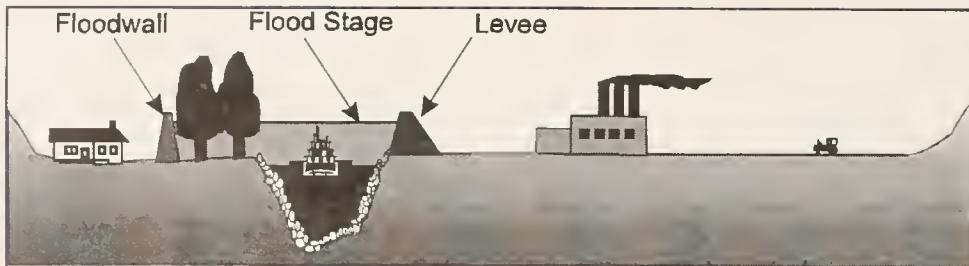
Source: Mark Schleifstein, *The Times-Picayune*, 11/19/98, Julie Anderson, *Omaha World-Herald*, 10/25/98

Flood Prediction Model Fails

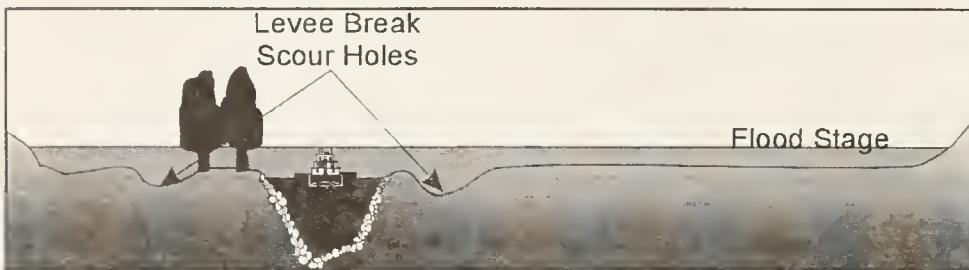
The fact that the Missouri River flooded this fall should come as no surprise to those who watched the *Kansas City Chiefs*' Monday night football game in Mid-October. The rains came so fast, and in such a torrential downpour that night that water running out of the stands and onto the field at *Arrowhead Stadium* literally looked like small rivers. Sadly, so much rain fell so fast that night that several people in the greater Kansas City area drowned in the swollen creeks. What did come as a surprise with this flood was the fact that later in the week the predicted downstream Missouri River flood crests didn't occur.

When experts predict a river will flood and it does, people appreciate that they had a chance to get prepared. But if a predicted flood doesn't happen, it can make some people unhappy. Dave Beckman, a farmer in West Alton, on the Missouri River just north of St. Louis, can tell you how much a missed flood call can hurt. He spent about \$2,000 to move grain to beat the mid October flood that never came. "They've been over predicting crests for years now," Beckman said. "This one was the worst yet." Beckman said he might have had to spend about \$7,000 to store all the grain he moved, but he got a break from the storage facility.

Larry Black is the National Weather Service hydrologist who predicted the Missouri River would crest 6 ft. higher than it did at St. Charles. He knows he lost face with farmers like Beckman when the river crested in St. Charles at 30.3 ft., as much as 6 ft. below his predictions. Black is in charge of the Missouri Basin River Forecast Center in Pleasant Hill, near Kansas City. As a member of the only legal authority in the nation that can issue a flood warning, Black took full responsibility for the miscalculation. But the question remained: How did he miss it by so much?



As shown here levees increase flood heights by narrowing river channels.



Areas where levees are broken or removed provide space for water to spread out across the floodplain, lowering flood heights in other areas. This is a natural floodplain function that open space, natural areas play in reducing flood damages.

A part of the answer had to do with a decision made after the 1993 flood. That's when the Missouri Department of Conservation (MDC) and the federal government began purchasing thousands of acres of ruined farmland along the River after record flooding. Most of the acreage lies along an 80-mile stretch of the Missouri River starting near Jefferson City and running upstream. The MDC and the U.S. Fish and Wildlife Service bought flood land but purposely didn't fix broken levees.

We have always said that channelizing the river and keeping it within levees worsens floods, said Jim Low, spokesperson for the MDC (See figures above). With his colleagues, Low listened as the National Weather Service revised its predictions downward during the week of the flood. Late in the week he flew over the remote MDC property purchased after the 1993 flood, and found thousands of acres of that land under water. "We're not in the flood prevention business", Low said, we bought the land primarily to serve as a wildlife habitat." "But nobody can argue", he said, "that every acre foot of water that spreads out and stands for a day or a week upriver is an acre foot of water that's not zipping over a levee at Jefferson City or St. Charles."

Black said the flood of 1993 so altered

the lay of the land - scouring out here, creating new lakes there, smashing levees - that old computer models used to predict flooding are virtually obsolete. The weather service, he said, is trying to correct the problems. He said they needed a flood like this to bring their computer models up to date.

A 10/14 editorial in the *Columbia Daily Tribune* summed it all up this way: "In 1993, the River Gods sent a message. We puny humans had done enough with our levees to stymie the natural flow of the rivers, particularly the largest and freest of them all, the Mississippi and the Missouri. Raging waters knocked down miles of artificial levees, sending water over lowland acres where high water traditionally had found outlet...It takes no hydrology expert to know why this is so. Without levees, flood water simply has much more territory for dissipation instead of being herded on. Pray we've learned to minimize levee building rather than the other way around. Some protective devices must be built and maintained, of course, but we'd gone much too far. Except where overall public welfare dictates, government policy should not encourage levee building."

Source: AP/Columbia (MO) Daily Tribune, 10/12 and 10/14/98

Ecological Value of Floodplain Habitats in the Colorado River Basin

Reconnecting floodplain habitats with rivers in the Upper Colorado River Basin is expected to benefit razorback suckers since these habitats will provide adequate quantity and quality of food organisms that are required by larval razorback suckers to survive their "critical period". Larvae and juveniles of other fishes including the other endangered species (Colorado squawfish, humpback chub, and bonytail) are also expected to benefit from zooplankton and benthic macroinvertebrates that enter the main channel and backwaters from floodplain habitats.

Predation and competition from nonnative fishes on native fish larvae and juveniles can be reduced in floodplain habitats with high densities of zooplankton and benthic food organisms that can serve as alternate food items. Floodplain habitats with rooted aquatic vegetation or other structure also provide protection to razorback larvae and juveniles that readily use such cover when available. In contrast, there is little to no survival of larval razorback suckers in the present low velocity habitats (primarily backwaters without cover) in Upper Colorado River Basin rivers.

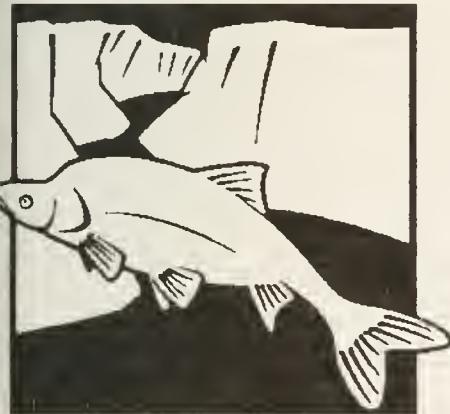


"Bonytail"

Historically, the continuum concept and the flood pulse concept both applied to nutrient cycling in the turbid, unproductive rivers of the Upper Colorado River Basin. However, fragmentation of Upper Basin rivers disrupted nutrient cycling through the continuum process. Although the flood pulse process was an integral part of the natural river-floodplain ecosystem, it is even more important for productivity in the present fragmented ecosystem. Reduction of historic peak stream flows and extensive levees prevent connectivity in this river-floodplain ecosystem. Reconnection of the floodplain with Upper Basin rivers will reestablish some of the lost integrity

and productivity.

The long-lived and highly fecund razorback suckers may not require successful recruitment annually to develop self-sustaining populations. The frequency of successful recruitment to produce self-sustaining populations of razorback suckers is unknown but can be determined through field evaluations. It is possible that successful recruitment every five to ten years may be sufficient to naturally maintain the razorback sucker since this species lives to 44 years or possibly longer. However, it would be desirable to have recruitment every year or as often as possible until target Recovery Program objectives are achieved.



RECOVERY PROGRAM FOR THE ENDANGERED SPECIES OF THE UPPER COLORADO

Recommendations:

1. Continue acquisition and enhancement/restoration of floodplain habitats in the Upper Colorado River Basin because reconnection of rivers with floodplain habitats will improve the productivity of the ecosystem for zooplankton and benthic invertebrates required for survival by the early life stages of the razorback sucker. Acquisition with the intent of preserving existing floodplains that are still functional will help maintain the existing integrity of the river-floodplain ecosystem. Reconnection of floodplain habitats appears to be critical to increase larval razorback sucker survival during their critical period so self-sustaining populations (i.e., recovery) can be developed. Also, adult razorback suckers may benefit from feeding on zooplankton and benthic invertebrates in the productive floodplain habitats to

regain their body condition after spawning. Mature razorbacks may spawn in floodplain habitats that would benefit natural reproduction when stream flows at normal river sites are unsuitable for spawning. Any enhancement or restoration endeavors must be made through experiments that are thoroughly evaluated using a systems approach that incorporates adaptive management processes. Areas that are enhanced/restored should be thoroughly evaluated to determine the responses of the endangered and nonnative fishes to such efforts and refinements made as necessary to achieve desired goals and objectives.

2. Continue to focus on levee removal to reconnect floodplains with Upper Basin rivers and consider excavating present floodplain terraces that are higher in elevation than present streambanks. Regulated stream flows can be managed to inundate floodplain habitats for a longer period of time to increase survival of razorback sucker larvae. Several large-river ecologists emphasize the importance of mimicking historic hydrographs to reestablish integrity of river-floodplain ecosystems. Field experiments to evaluate increasing stream flows will have to deal with private land issues and streamflow variability will have to be increased incrementally to minimize flood hazards to private agricultural or occupied floodplain areas. The timing of flows through regulated water releases from dams is important to ensure that (1) flows and substrate in the main channel are suitable for razorback sucker spawning and (2) flows will inundate floodplains so that larval razorbacks have access to productive floodplains during their critical period. Removal of levees that are located on the lowest floodplain terraces (public property or acquired private property) is an alternative way to reconnect mainstem and tributary rivers with productive floodplain habitats. Such removal should be done on properties that can be easily reconnected with the main channel and inundated with existing or slightly enhanced stream flows. Since the existing floodplain terraces were deposited when natural stream flows were high, floodplain terraces in prime areas that can be easily inundation are limited. It may be neces-

sary to excavate existing terraces so that present and/or restored streamflow regimes can inundate floodplains where levees are breached.

3. The river discharge necessary to provide an adequate frequency of inundation of floodplain habitats should be initially made on an annual basis or as often as possible. However, long-lived fish species that have exhibited strong year-class strength such as the razorback sucker or Colorado squawfish may only require inundation of floodplains in 1 out of 5 to 10 years to maintain self-sustaining populations after populations have been reestablished.

4. The use of depression ponds in the floodplain should be considered as prime habitats for rearing wild razorback sucker larvae or captive-reared razorback suckers. Shallow floodplain depressions may require excavation to increase the water depth to prevent winterkill if the razorback suckers are reared to a larger size. Excellent growth of razorback suckers in floodplain habitats has been demonstrated in the Upper and Lower Basins of the Colorado River system. Floodplain depression ponds provide habitat where razorback suckers can reach a size when predation by nonnative fish species would be considerably reduced as razorbacks gain access to the river on subsequent high stream flows. If frequency and duration of flooding through managed stream flows cannot be restored, then floodplain depressions may be the only course of action left for maintaining razorback sucker stocks from extinction until solutions are found for recovery.

5. Design and conduct appropriate field experiments as Recovery Program funds are available to determine the control method(s) that will be adequate to reduce or manage selected nonnative fish species where the floodplain has been reconnected with the main channel. Control of nonnative fishes on a large-scale basis in a large river system is not practical based on the published literature. Therefore, nonnative fish management should be emphasized in river reaches that are immediately upstream or downstream of floodplain habitats that are already connected or are reconnected to the river.

6. Continue reintroduction stocking of captive-reared razorback suckers in the upper Colorado River and augmentation stocking in the middle Green River. Floodplain ponds in the vicinity of suitable spawning bars in adjacent rivers can be used to rear wild razorback sucker larvae or captive-reared juveniles. The use of such ponds would expose fish to waters that provide olfaction cues in the event that imprinting behavior is important. Exposure to feeding on natural food organisms may also be important to survival after release into Upper Basin rivers. The average size of razorback suckers at the end of the first growing season in the Upper Basin is about 100 mm TL (~ 4 in) and about 300 mm TL (~ 12 in) at the end of the second growing season in off-channel habitats. The best survival of captive-reared razorback suckers in the Upper Basin has been from larger stocked fish. It is highly recommended that razorback suckers be reared for two growing seasons and stocked when they are about 300 mm TL (~ 12 in) or larger. Although augmentation stocking is not recovery, it provides a mechanism to maintain adult razorback suckers in the Upper Basin until a solution is found to achieve self-sustaining populations (i.e., recovery). Evaluate factors that may affect survival of razorback suckers after stocking, including (1) use of floodplain ponds as a "half-way" habitat where captive-reared razorback suckers can become conditioned to eating natural food organisms before release, (2) importance of physical conditioning to various water velocities prior to release, (3) size of fish at release, and (4) time of release, etc. If the provisions of (1) nursery habitat with adequate food and cover and (2) adequate control of nonnative fishes cannot be achieved, human intervention may be required to rear razorback suckers in predator-free off-channel habitats so that their populations can be either reestablished through reintroduction stocking or bolstered (i.e., jump-started) through augmentation stocking.

Source: Wydoski, R. S. and E. J. Wick 1998. *Ecological Value of Floodplain Habitats to Razorback Suckers in the Upper Colorado River Basin*. Upper Colorado River Basin Recovery Program, USDOI, FWS, Denver, CO. Final Rept. 10/1/98. 55 pp.

Upper Mississippi River Navigation Study Delayed by Corps

Environmentalists are criticizing the Army Corps of Engineers' \$50 million study of options to increase barge traffic on the Upper Mississippi River. The "present" study, underway for more than five years so far, is looking at doubling lock sizes or installing new mooring facilities to increase barge capacity. Environmentalists "charge that the Corps has quietly ditched its first set of findings" and embarked on a revised study in order to reach a conclusion that would justify river expansion. Environmental groups are concerned that major work on the river will jeopardize wetlands and wildlife.

A half-dozen environmental groups, including the *Environmental Defense Fund*, the *National Wildlife Federation* and the *Sierra Club*, recently wrote to Army officials that the Corps' procedures "call into question the integrity of [the Corps'] planning process."



But Corps spokesperson Ron Fournier said the agency is redoing parts of the study because "the Corps has had to question some of its own assumptions" and are simply trying to be accurate.

The controversial study is also under attack by navigation boosters and may be delayed for at least one year. The study was scheduled to be complete by the end of 1999 -- a deadline set by Congress. But the Corps says

that their models developed to forecast growth of barge traffic and potential environmental problems need to be reviewed by outside experts. "We will not be able to complete the study as planned by December of 1999," said Dudley Hanson, Planning Chief for the Corps' Rock Island District, which is overseeing the study. "It was an ambitious timetable and we are simply trying to ensure data from our models is entirely accurate."

The Corps has been unable to integrate different models designed to predict future barge traffic, environmental problems, and engineering needs, Hanson announced at a meeting of state officials this fall. The real problem with the models, sources said, was that they were not giving navigation boosters the results they wanted. The study was initiated in 1993 to address costly delays at locks and to recommend ways to accommodate traffic increases in the future. While most locks are 600 feet long, tows typically push 15 barges which are 1,200 feet long when combined, forcing tow operators to lock through in two steps -- a process which can take up to two hours. Eight of the 29 locks on the Upper Mississippi River were identified by the Corps as being among the 20 locks in the country with the longest average delays.

Navigation boosters would like to expand the length of seven locks -- five on the Mississippi and two on the Illinois River -- from 600 to 1,200 feet. But, Corps economists have concluded that small-scale measures, which include helper boats, longer guidewalls, and power operated ratchets, would more cost-effectively reduce delays. Navigation industry officials questioned the ability of small-scale measures to reduce delays and contended that government experts had over-estimated the benefits of such measures. They are also concerned about the likelihood of accidents. And, they wonder why Corps-funded lock expansions make sense on the Ohio River but not on the Mississippi.

If they don't get the answers they want, some navigation boosters are prepared to ask Congress to give the Corps a math lesson. They told state officials that the Corps is relying on unrealistic traffic projections which might require a "Congressional rem-

edy." For some, the debate between small-scale measures and longer locks is a non-issue. Environmentalists warn that small-scale measures such as mooring cells and helper boats raise just as many environmental concerns as longer locks. "Whether the Corps recommends longer locks or small-scale measures is irrelevant," said Jonathan Ela, Mississippi River specialist for the *Sierra Club*, a national environmental group. "Either way, the Corps is proposing to allow twice as many barges on the river without adequately assessing the long-term impacts of increased traffic on habitat for river wildlife. Their models and studies won't answer that."

This is not a new controversy! It dates back at least to 1978 when Congress directed the *Upper Mississippi River Basin Commission* (UMRBC - a federal commission later eliminated by the Reagan Administration) to complete a *Comprehensive Master Plan for the Management of the Upper Mississippi River System*. The Master Plan was to solve these issues once and for all and to recommend to Congress the size of a 2nd lock to be constructed at Lock and Dam 26 near Alton, IL. Environmentalists said at the time that the \$1 billion Lock and Dam 26 (then under construction with one 1200 foot lock) was the keystone to expansion of navigation traffic on the entire Upper Mississippi River. Once Lock 26 was enlarged, they said, one by one (domino style), there would be a need to expand each upstream lock all the way to the Twin Cities. In this piece-meal fashion navigation capacity would be expanded for the entire system without ever addressing the systemwide impacts on the river's fish and wildlife resources.

The MICRA Coordinator/Executive Secretary (then representing the Department of the Interior) served as Chairman of the Interagency Environmental Work Team (EWT) assigned by the UMRBC to address the systemwide impacts of navigation on fish, wildlife and recreation. The Master Plan's EWT studies were cut short by the Lock and Dam 26 construction schedule, and a compromise decision was forced by navigation interests. The final result was a 1981 decision by Congress to expand the navigation capacity of Lock 26 by adding a \$300

million, 600 ft. second lock to the facility, and to fund a \$300 million, 10 year Environmental Management Program (EMP). The 2nd lock was built and the EMP began implementation in 1986.

So here we are twenty years after Congress authorized the *Master Plan*, and still we have no answer to the impacts of navigation expansion on the river system's fish, wildlife and recreational resources. The continuing political sensitivity of this issue hit home last month when the MICRA office received a call from the senior author of the article, *"Barge Caused Fish Mortality"*, that we printed in the September/October issue of *River Crossings*.

The article, printed as a large quote, was sent to us from sources inside the federal government who had read it in a government review document at an August meeting held in Madison, WI. Since no government meetings are closed to the public (especially in Wisconsin), we assumed that the article was available for public digestion. The small bit of information it provided seemed to us the least that we and the public could expect see after twenty years and millions of dollars worth of study. Apparently, however, even this small bit of information was not intended to be seen by the public. We apologize to any of the authors who may have been pressured or inconvenienced because of our use and publication of their work.

Sources: Philip Dine, *St. Louis Post-Dispatch*, 10/1/98; and Dan Kaplan, Staff Writer, *Mississippi Monitor*, October 1998

Invasive Species Threat

Natural barriers that are the "instrument of evolution" are "losing their ecological reality, as more and more organisms are moved around them," according to Chris Bright in an excerpt from the *Worldwatch Institute's* "Life out of Bounds". He writes that invasive species "may already rank just behind 'habitat loss'" as a global threat of extinction, and that non-native species have been a factor in 68% of U.S. fish extinctions this century.

Some environmentalists call the phenomenon "smart pollution" because the species can evolve to "dominate and sometimes destroy native plants and animals." "Even the worst chemical spills are dumb", Bright said. "They cannot reproduce and they dissipate over time. But smart pollution proliferates and spreads."



Bright uses the example of organisms traveling in ballast water as one of the major causes of species spreading around the world. The ballast-water problem "appears to have worsened" over the past 30 years, a development some attribute to faster-moving ships that increase the likelihood that organisms will survive the trip between ports. The *International Maritime Organization* has issued shipping guidelines recommending that ballast water be replaced at sea rather than in port. It is also examining other options such as treating the water with heat, chemicals and by filtration.

The report also says that invasive species can be transported in the wheel wells of aircraft and sometimes in "valuable artifacts". Global trade and travel patterns allow species to move across natural boundaries like mountains, deserts and oceans. Bright also said the spread of "exotics" endangers public health and costs millions of dollars a year.

According to Bright, "attempts to deal with the problem in an integrated way have been pretty weak and inconsistent." The report suggests strengthening international treaties, re-engineering ship-ballast water systems and developing international monitoring systems.

Sources: *Inter Press Service*, 10/12/98; David Briscoe, *AP/Seattle Times/others*, 10/11/98; *Baltimore Sun*, 11/2/98; Simon Hadlington, *Financial Times*, 10/27/98; and *National Journal's GREENWIRE, The Environmental News Daily*, 10/13 and 11/2/98

Ag Waste Update

The U.S. water supply is threatened by the 1.4 billion tons of chicken and hog waste produced each year, according to a recent report by the *National Research Council*, a branch of the *National Academy of Sciences*. The report, by the council's geosciences committee, notes recent outbreaks of toxic microbes like *Pfiesteria piscicida* and *cryptosporidium*, which are believed to have been caused by runoff of agricultural waste. The council calls for revamping the Clean Water Act so that watersheds are considered as a whole instead of in separate parts.

Meanwhile, the *American Farm Bureau Federation* (AFBF) in October issued a report from its Water Quality Task Force that questions federal and state agricultural water quality regulations and recommends increased involvement from its members in the regulatory process. The 35-member task force expressed concern that the USEPA is using "aggressive initiatives" to broaden its authority under the Clean Water Act to address agricultural runoff concerns. The panel also said regulatory agencies are using "flawed" sample data to argue that 70% of rivers and streams in the U.S. are impaired by agricultural runoff. AFBF President Dean Kleckner said the report "charts an aggressive course for Farm Bureau action, including cooperation at the watershed level, active involvement at the regulatory level, continued effective legislative advocacy and litigation if regulators fail to follow the letter of the law".

In Delaware the Agricultural Industry Advisory Committee on Nutrient Management in September heard proposals on how to address poultry waste pollution. One suggestion outlined a proposal by UK-based *Fibrowatt* to use the waste to produce electricity, while another option would use feed additives to reduce the phosphorus in the manure. Meanwhile, a state newspaper reported that Gov. Thomas Carper (D) has moved away from supporting "voluntary" compliance for manure man-

agement toward more state regulation. But a spokesperson for the governor said he has not yet taken a position, and the state has put out recommendations for review.

Sawtooth Farms LLC has proposed a \$1 billion hog-raising operation in Idaho on land adjacent to the National Engineering and Environmental Laboratory instead of in Owyhee County, as originally proposed. The company, which has yet to submit a formal proposal, says it would use a "state-of-the-art" system of bacteria-eating bugs to help purify and dispose of animal waste in covered, lined ponds.

Iowa's highest court has struck down a state law that shielded livestock operations from lawsuits over air and water pollution. "Declaring the law flagrantly unconstitutional," the Iowa Supreme Court on 9/23 ruled that the immunity amounted to taking away the property rights of nearby residents. The 1982 state law allowed counties to designate land parcels as "agricultural areas" and thereby give farmers protection from any lawsuits filed over livestock confinement. But the court agreed with the plaintiffs, who argued that such protection gave hog producers a right to "create or maintain a nuisance over the neighbor's property" and deprived the neighbors of their property rights without compensation. Legal analysts said Iowa is the first state to remove lawsuit immunity for farm operations. Professor Neil Hamilton of *Drake University* in Iowa "predicted the ruling will be studied closely across the nation". Pork producers feared the decision would unleash a torrent of lawsuits, as residential development spreads closer to farms in once-rural counties. The *Environmental Policy Project* at *Georgetown University* said that "for

years," farm groups have supported the "takings" agenda and argued that regulation of their operations was an unconstitutional infringement of their property rights. Now the Iowa court has said that the state statute allowed farmers to "take" the property of their neighbors, because it permitted a condemnation of nearby land by nuisance.

The *Sara Lee Corp.* in Wisconsin has announced a proposed settlement to a lawsuit that alleged the *Peck Meat Packing Corp.*, a *Sara Lee* affiliate, dumped animal waste contaminated with *cryptosporidium* into a public sewer system near Milwaukee in 1993. The company contends it bears no responsibility for the pollution, "especially since it has never been proven that the Peck plant was discharging *cryptosporidium*." Under the deal, the companies would be released from any liability in exchange for paying \$250,000 into a fund that would be used to pursue claims against other defendants.

South Dakota is moving towards "center stage of a decades-long battle" between family hog farmers and multibillion-dollar agricultural companies after voters approved a constitutional amendment "severely limiting nearly all forms of corporate involvement in agriculture." Groups such as the *National Pork Producers Council* fear the restrictions, described as the "strictest" in the U.S., could be an "ominous precedent" that may spread to other states. Nebraska is the only other state that has an anti-corporate farming provision in its constitution, while seven states have time limited restrictions on corporate involvement in agriculture. Although the measure passed with 59% of the vote, a legal challenge is "all but certain".

In Maryland the *Sierra Club*, other environmental groups and "dissident farmers" in mid November called for a three-year moratorium on new or expanded livestock operations in the state, calling the eastern shore's \$1.5 billion poultry business the "largest unregulated industry" in the Chesapeake Bay



region. The ban would allow state and federal regulators time to develop guidelines to limit the industry's water pollution. Also, in Maryland agriculture and environmental officials are reviewing a proposal by a Texas company to build a factory on the Eastern Shore that would turn poultry manure into an insoluble fertilizer that could stem some leaching of nutrients into the Chesapeake Bay and its tributaries. Officials at Houston-based *Ag Org Texas Co.* are seeking to pay farmers for their manure in a venture "they think can help Maryland with a major pollution problem and turn a profit in the process." They presented the plan in October to the Maryland Dept. of Agriculture and the *Chesapeake Bay Foundation*. The proposed plant's technology involves mixing poultry manure with three other organic ingredients and baking the mix into time-release pellets. The mix is 80% insoluble. The 20% (in nitrogen and phosphorus) that leaches out of the fertilizer is absorbed by growing plants, according to *Ag Org* partner Martin Reiner. Excess nutrients are suspected of fueling toxic outbreaks of *Pfiesteria piscicida* and generally contributing to declining ecosystem health in the bay. Maryland Dept. of Agriculture Asst. Secretary Bradley Powers said the plan "has great potential," and George Chmael of the *Chesapeake Bay Foundation* said "we were intrigued by what they proposed." *Perdue Farms* officials said they would review the company's proposal.

In North Carolina two months after state officials announced a deal with the US EPA over hog farm regulation, the EPA last week joined a lawsuit challenging the regulations. The *American Canoe Assn.* wants hog producers to get the same permits required of sewage treatment plants and polluting industries. If the suit is successful, the state would have to "revamp its entire permit system for industrial-style farms," according to Don Reuter of the state Dept. of Environment and Natural Resources. Meanwhile, the *National Pork Producers Council* has asked Pres. Clinton to ease federally imposed environmental restrictions on a Tar Heel, NC, hog processing plant to allow more pigs. The EPA has restricted the *Carolina Foods Processors* Plant to 144,000 hogs a week because of pollution concerns.

The Sussex County, VA, Board of Supervisors in October voted to limit the number of chickens allowed on any farm to 100,000. The decision prompted Mississippi-based *Cal-Maine Foods Inc.* to abandon its plans to build a 1.5-million-chicken farm in the county, which would have been the largest poultry facility in the state. A coalition of farm groups in Virginia will propose legislation giving the Virginia Dept. of Agriculture and Consumer Services oversight of poultry waste. The effort is aimed at "short-circuiting" a proposal by Del. Tayloe Murphy (D) that would give the state's environmental agency regulatory authority over poultry waste. Environmentalists called the farm groups' proposal "lax" and "insufficient".

Meanwhile, a *University of California* at Berkeley biologist says that, wetlands may be the answer to cleaning toxic concentrations of selenium from farm waste water that has poisoned waterfowl and other wildlife. Scientists studying an oil cleanup project found "intriguing evidence" that some wetlands can convert selenium, a toxic, inorganic trace element, into a nontoxic gaseous form. Researchers believe that creating artificial wetlands between farms and evaporation ponds may head off high levels of selenium and other toxic trace elements in evaporation ponds. Norman Terry of the *University of California* at Berkeley said, "It has a great chance of succeeding as a way of cleaning up ag drainage water." In the 1980s, selenium contamination killed and deformed thousands of birds at the Kesterson National Wildlife Refuge in southern California, and selenium has been blamed for part of the pollution problem in the Salton Sea.

Sources: *Washington Times*, 10/11/98; Gregory Layton, *Dover Delaware State News*, 10/15/98; D.L. Bonar, *Dover Delaware State News*, 10/20/98; Jennifer Langston, *Idaho Falls Post Register*, 10/13/98; Frank Santiago, *Des Moines Register*, 9/24/98; *AP/Omaha World-Herald*, 9/24/98; *EPP release*, 9/29/98; Bill Geroux, *Richmond Times-Dispatch*, 10/17/98; *AP/Washington Post*, 10/12/98; Judith Graham, *Chicago Tribune*, 11/23/98; Guy/Dewar, *Baltimore Sun*, 11/19/98; *AP/Raleigh*

News & Observer, 11/22/98; *AP/San Francisco Chronicle/Examiner* online, 11/21/98; Greg Edwards, *Richmond Times-Dispatch*, 11/21/98; Scott Harper, *Norfolk Virginia-Pilot*, 11/21/98; Sources: Ted Shelby, *Baltimore Sun*, 10/22/98; *AFB release*, 10/27/98; Christine Hanley, *AP/Journal of Commerce*, 10/26/98; and *National Journal's GREENWIRE*, *The Environmental News Daily*, 9/30, 10/21, 10/22, 10/24, 10/26, and 11/3/98

Sustainable Farming in Australia

Rural Australia knows that sustainable agriculture is no longer an option. The *National Farming Federation* (NFF) publication *Hand in Hand: farming sustainably* illustrates, through a series of case studies, that economic and environmental sustainability go hand in hand. Sustainable agriculture means improving economic efficiency and productivity, along with the equal need for protection and enhancement of environmental values. Today, environmental concerns are an integral part of every decision that farmers make about what they do on their farms.

NFF has a long term commitment to making the Australian agricultural sector sustainable into the next century. This is why NFF was not only a founding member of the *National Landcare Program*, but continues to be one of its strongest advocates and supporters. The bottom line for farming is that it must be both profitable and environmentally sustainable. The two are naturally complementary and neither can exist without the other.

For more information and a free copy of the booklet: *Hand in Hand: farming sustainably*, contact Anwen Lovett, *National Farmers' Federation*, GPO Box E10, Queen Victoria Terrace, Barton ACT 2600 Tel: (02) 6273 3855 Fax (02) 6273 2331

Source: *Riprap*, Issue 10, 1998 (Newsletter of *Land & Water Resources Research & Development Corporation*, Riparian Lands R&D Program, GPO Box 2182, Canberra ACT 2601, email: public@lwrrdc.gov.au)

Miscellaneous River Issues

Big Sunflower River Suit: The *National Wildlife Federation* (NWF) filed a lawsuit in November against the Army Corps of Engineers to block a Corps plan to dredge parts of the Big Sunflower River Basin. The suit contends that the \$62 million plan could disturb the sediments, which are believed to be laced with DDT, and damage "important fish and wildlife habitat". Sources: *NWF release*, 11/5/98; and *National Journal's GREENWIRE, The Environmental News Daily*, 11/12/98

Cahaba Shiner: The endangered Cahaba shiner is the subject of a suit against the U.S. Fish and Wildlife Service (USFWS) filed by three conservation organizations. *Wild Alabama, the Biodiversity Legal Foundation* and *Wildlaw* have filed a notice of intent to sue, saying the USFWS has failed to designate critical habitat or implement the fish's recovery plan and is "meeting the fish's needs in a piecemeal fashion". Source: *National Journal's GREENWIRE, The Environmental News Daily*, 11/24/98

Chattahoochee River Water War: The Chattahoochee River "is at the center of a new water war" between Alabama, Georgia and Florida, and analysts say this type of conflict will become more common as pressures from development continue. Georgia has been the primary user of Chattahoochee River water, and Atlanta's "booming" growth has led state officials to devise a plan to draw more of the river's flow by building a dam and storing more supply. The prospect of a decreased flow has "alarmed" downstream Alabama, which sued to block Georgia from building additional reservoirs. Under court order, Alabama and Georgia have proposed water-sharing compacts for the river, and if the three states don't agree on a deal by 12/31, a federal judge will decide the issue. As the population of Southern cities grows, "we are going to hear more and more of these battles" more typically associated with the West, according to Kenneth Reckhow of the *University of North Carolina*. Sources: *Larry Copeland, USA Today*, 11/24/98; and *National Journal's GREENWIRE, The Environmental News Daily*, 11/24/98

Cheat River Acid Mine Waste: Under an agreement with the West Virginia Division of Environmental Protection and the USEPA, *Coastal Coal Co.* has agreed to pay \$1.7 million over five years to clean up acid mine drainage that it discharged into a tributary of the Cheat River. *Coastal Coal* will also pay a \$100,000 fine. Sources: *EPA release*, 9/28/98; and *National Journal's GREENWIRE, The Environmental News Daily*, 10/1/98

Environmentally Clean Power: The New York Public Service Commission has ordered utilities, beginning in 4/00, to notify customers about the sources of its electricity and how much of it would qualify as environmentally "clean". Meanwhile, in Pennsylvania electricity competition is forcing some consumers to "choose sides" between environmental activists and competing marketers, as "even generation sources touted as Earth-friendly have their environmental tradeoffs," the *Philadelphia Inquirer* reports. Hydropower plants can disrupt fish spawning; biomass plants can cause forest clear cutting; and windmills can kill birds, the newspaper reports. The Ralph Nader group *Public Citizen* in October issued a report in California that said many claims about green power "cannot be verified," and that "false and misleading green product claims are common." But the *Natural Resources Defense Council* and Pennsylvania's *Clean Air Council* have united behind the Green-e certification program, which accredits suppliers that get at least 50% of their energy from renewable sources. In California, the demand for green energy "has been one of the surprises of electric deregulation," with more than 33% of switching customers choosing green products. In Pennsylvania, about 10% of the more than 2,000 customers who have switched have chosen green power. Sources: Rich Heidorn, *Philadelphia Inquirer*, 11/8/98; and *AP/Buffalo News*, 11/6/98; and *National Journal's GREENWIRE, The Environmental News Daily*, 11/9 and 11/10/98

Ephemeral Stream Regulations: The New Mexico Environment Dept. has proposed extending water quality restrictions to "ephemeral streams," such as dry washes, arroyos and canyon bottoms that fill with rushing

water during storms. The proposal, which is opposed by ranching, mining, and farming interests, could force the Los Alamos National Laboratory to implement expensive waste-treatment measures to ensure that toxic chemicals are not discharged into canyons in the Pajarito Plateau. Sources: *AP*, 9/23/98; and *National Journal's GREENWIRE, The Environmental News Daily*, 10/1/98

Idaho Pollution: A U.S. District Court judge has ordered Idaho to devise a plan to clean up the Portneuf River, where silt and nutrients are degrading water quality. The state Division of Environmental Quality attributes the pollution to both agricultural waste and sewage plants. Sources: *AP/Idaho Falls Post Register*, 11/10/98; and *National Journal's GREENWIRE, The Environmental News Daily*, 11/13/98

Iowa Species Listings: State scientists are moving to cut by half the number of species on the state's endangered species list as part of a periodic revision of the state's Protected Species Program. John Pearson of the Iowa Dept. of Natural Resources said the new list is an effort to focus attention and resources on the most threatened species and those that thrive primarily in Iowa. Sources: *Perry Beeman, Des Moines Register*, 11/22/98; and *National Journal's GREENWIRE, The Environmental News Daily*, 11/24/98

Kansas Groundwater Pollution: Wichita is suing 26 companies for \$25-30 million, claiming they are responsible for a four-mile-long "blob" of groundwater pollution downtown. The city in 1991 began cleanup of the solvents, marking the first time any U.S. city had accepted financial liability for a large cleanup to keep a site off the federal Superfund list. Sources: *Hays/Lessner, Wichita Eagle*, 10/8/98; and *National Journal's GREENWIRE, The Environmental News Daily*, 10/14/98

Louisiana Nuke Leak: Citing safety concerns, the D.C.-based *Union of Concerned Scientists* (USC) in September petitioned the Nuclear Regulatory Commission (NRC) to shut down the *River Bend Nuclear Power Plant* in West Feliciana Parish, LA. The group said it had taken the action after the plant's operator, New Orleans-based

Energy, discovered the "possibility" that one or more fuel rods in the plant's reactor might have a "pinhole" leak, allowing radiation to escape into the reactors' cooling water. A spokesperson said the company had followed its "standard procedure," cutting power output to 65% of capacity and inserting a control rod next to the suspected leaker. The problem is "common" in nuclear reactors and presents no safety concern, an NRC spokesperson said. But the UCS said River Bend appears to be violating the industry-wide policy of reducing worker exposure to radiation. The group said the NRC has noted a five-fold increase in radiation exposure rates in some areas of plants where fuel rods have pinhole leaks. The UCS's David Lochbaum said, "Last April we gave the NRC a full report on the serious safety hazards of operating a nuclear plant with a failed fuel barrier. ... Now ... the time has come for the regulators to regulate." The group said that the plant should stay closed until the leaking fuel rods are replaced or the company amends its permit to operate with known fuel damage. Sources: James Minton, *Baton Rouge [LA] Advocate*, 9/30/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 10/1/98

Low Impact Logging: Loggers who use horses and band saws to "selectively harvest trees" offered public demonstrations in southeast Kentucky in early October to highlight low-impact timber business practices. Independent logger Gary Anderson uses two Suffolk horses for transport and a portable, diesel-fueled band saw to harvest wood marked "inferior" by the U.S. Forest Service. The horses enable loggers to avoid using roads and disturbing undergrowth, and the band saw, "a portable sawmill," allows 50% more harvest per log, because its blade is able to make "tighter, closer cuts." Anderson estimates his costs at \$10/day. The horses cost \$2,000 each, "much less than mechanical log skidders." He estimates his overall start-up costs for getting into the logging business at under \$40,000. According to U.S. Dept. of Agriculture conservationist Tim Anders, using horses for logging practices causes "little damage to the ecosystem" and the Kentucky Dept. of Agriculture's John Cotten said, "There are definitely some markets" for the wood.

Sources: Janet Patton, *Lexington Herald-Leader*, 9/29/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 9/30/98

Maryland Nutria Infestation: Nutria, rodents that have cost Louisiana millions of dollars in control efforts, are destroying wetlands in Maryland and other Eastern marshes. The 40,000 or so nutria in Maryland have contributed to the destruction of about 7,000 acres of the Blackwater National Wildlife Refuge. The rodents chew up marsh grasses at the root, turning wetlands into "swaths of shallow, lifeless water." Refuge biologist Keith Weaver said, "We're starting to get the impression that once it gets to be open water, it's lost marsh, irreversible." Weaver called nutria "a cancer on the marsh" because they literally destroy the places where they eat and they have no natural predators. Wetlands loss means the loss of habitat for frogs, a diet staple of bald eagles and peregrine falcons. Congress in October authorized \$2.9 million for a project to begin in 2000 that will test methods to eradicate nutria. Researchers also will try to restore damaged areas by replacing sediments and replanting native grasses. Sources: Heather Dewar, *Baltimore Sun*, 11/10/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 11/10/98

Montana Cyanide Mining: State Sen. Chuck Swysgood (R) said he will introduce legislation to repeal the "controversial" measure passed on 11/3 that bans new or expanded cyanide mines in Montana. Mining interests have already filed suit to overturn the new law, saying that it violates the Federal Mining Law of 1872. Sources: Erin Billings, *Billings Gazette*, 11/6/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 11/6/98

Mountaintop Removal: The Interior Department's Office of Surface Mining Reclamation and Enforcement on 10/2 finalized an agreement that gives Kentucky authority to regulate and reclaim surface and underground coal mining operations on federal lands in the state. Then on 11/4 the West Virginia Dept. of Environmental Protection (DEP) Director Michael Miano issued "the largest mountaintop removal permit in West Virginia

history" for the Arch Coal Inc.'s Dal-Tex complex in Blair, WV. The USEPA in 8/98 moved to block permits for the project because of the potential damage to surrounding waterways. The EPA said the DEP permit writers "did not do enough studies to conclude the mining would not violate the Clean Water Act." The EPA water-quality permit for the project is still pending. Miano said the DEP granted the permit because Arch Coal had threatened to lay off 400 workers if the agency didn't approve it. Russ Hunter, the top lawyer in the DEP's Office of Mining and Reclamation, said Miano issued the Arch Coal permit on the condition that mining not start until the EPA permit is approved. Meanwhile, the director of the West Virginia Division of Forestry on 10/31 resigned from his post, saying that Gov. Cecil Underwood (R) attempted to stifle his opposition to "mountaintop removal" strip mining. Bill Maxey, who has held his post since 1993, said he was also pressured by the DEP and the U.S. Office of Surface Mining to approve regulations justifying



mountaintop removal practices. Sources in those offices denied Maxey's charges. Meanwhile, "mine operators say they are losing money every day because of what amounts to a moratorium on new permits" for mountaintop removal mining in light of lawsuits challenging the practice. A recent poll of 406 West Virginians by the *Charleston [WV] Daily Mail* and WSAZ-TV, Huntington, found that 53% of respondents opposed mountaintop removal mining, while 29% favored it, and 18% were unsure. The poll had a margin of error of +/- 5%. Sources: Lee Mueller, *Lexington Herald-Leader*, 9/30/98; *DOI release*, 10/5/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 10/1 and 10/14/98; Jennifer

Bundy, *AP/Charleston [WV] Gazette*, 11/1/98 Martha Bryson Hodel, *AP/Charleston [WV] Gazette*, 11/1/98; Ken Ward, *Charleston [WV] Gazette*, 10/31/98; *AP/Charleston [WV] Gazette*, 10/30/98; Ken Ward, *Charleston [WV] Gazette*, 11/4/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 11/4 and 11/6/98

Ohio River Awareness: The USEPA has awarded a \$475,000 grant to the *Miami Valley Regional Planning Commission* to provide information to heighten public awareness of area rivers. The \$3.5 million federal program, called Empact grants, grew out of a 1996 initiative from Pres. Clinton concerning citizens' right to know about the quality of air and water. Meanwhile, *LTV Corp.* -- a steel manufacturer that operates wastewater treatment systems on the Cuyahoga River -- has agreed to pay a \$419,000 settlement to the state for wastewater discharge violations dating from 1993. Sources: Dale Dempsey, *Dayton Daily News*, 10/27/98; *Cleveland Plain Dealer*, 10/31/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 11/3/98

Oregon Stream Restoration: The federal government will pay Oregon farmers \$200 million during the next 15 years to plant trees and fence out livestock along streams where salmon habitat has been degraded, marking the first time property owners will be paid for such actions to protect a federally listed species. The plan, announced on 10/17 by Agriculture Secretary Dan Glickman, Sen. Ron Wyden (D/OR) and Oregon Gov. John Kitzhaber (D), will use Conservation Reserve Enhancement Program money to entice area farmers to restore as much as 100,000 acres of land along 2,000 miles of state streams. The agreement is expected to provide a "significant boost" to Kitzhaber's salmon restoration plan, which relies on voluntary measures to improve water quality in Oregon rivers. VP Al Gore said that he was "pleased" with the agreement. He said, "This federal-state partnership helps sustain both a healthy environment and strong farm economy." *Oregon Cattlemen's Assn.* Pres. Sharon Beck said that the program is preferable to federal mandates, but she said it could lead to restrictions on property owners.

"With federal assistance programs, there are always strings attached," she said. Four other states receive Conservation Reserve funds to protect the quality of their waters: Maryland, Illinois, Minnesota and New York. Sources: Jonathan Brinckman, *Portland Oregonian*, 10/17/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 10/19/98

Pennsylvania Permit System Revision: The Pennsylvania Dept. of Environmental Protection (DEP) is moving to "relax some of its water-pollution regulations," and government officials say the action would not diminish the quality of the state's water. The DEP's plan is to allow companies to obtain a "general permit" for the release of toxic chemicals rather than individual permits for specific chemicals. And the new rules would remove "aquatic-life criteria" standards for 76 chemicals and remove all numeric standards for 19 others including cobalt, which is "highly toxic" to aquatic life. The current aquatic-life criteria are "designed to protect fish and other organisms" in a state that is the nation's second-largest discharger of toxic chemicals into streams and rivers. Robert Wendelgass, state director of *Clean Water Action*, says granting companies general permits would "reduce the ability of the state to monitor toxic discharges." Barbara Kooser of the *Chesapeake Bay Foundation* said, "The changes actually roll back the current protection of our waterways from the effects of toxic chemicals." The environment subcommittees of the state House and Senate must approve the proposed changes before they could take effect. Sources: Paul Nussbaum, *Philadelphia Inquirer*, 10/28/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 10/20/98

Texas Groundwater Case: The Texas Supreme Court is preparing to hear a case challenging the "rule of capture" that allows "the virtually unlimited pumping of groundwater," regardless of the impact on other water users. In this case, landowners sued the Irving-based *Ozarka Natural Spring Water Co.* for lowering aquifer levels in East Texas and drying up the plaintiffs' wells. Texas is the only state where the 94-year-old rule still stands, as other states gradually

abandoned it as "aquifers became strained by myriad users." Legal experts believe that the court is poised to overturn the rule, which has already withstood several legal and legislative challenges. Austin lawyer Lee Parsley said, "The only likely explanation for why the court took this case is to rewrite the law in this area." In the 1904 Texas Supreme Court decision that established the rule of capture, the court declared the groundwater could not be regulated because it is too "secret, occult and concealed" to be legally allocated. Today, engineers can pinpoint exactly how much water flows and where, and most states rely on pro rata allocations based on percentages of total water available. The *Texas Farm Bureau* intends to file arguments in support of the rule. Sources: Mary Flood, *Wall Street Journal* [Texas edition], 9/23/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 10/1/98

Texas Dump Fine: After just two hours of jury deliberation, the owner of the largest illegal dump in Texas has received the state's "heftiest sentence" ever levied for an environmental crime. Herman Nethery was sentenced to a 30-year prison term and was ordered to pay \$10,000 in fines and \$125,900 in restitution for his "organized criminal activity" in connection with operating the 84-acre dump a half-mile from the Trinity River in southeast Dallas. His former partner, Herman Gibbons, pleaded guilty to the same charge in 1996 and was sentenced to 10 years in prison. In 1997, a fire at the dump "raged" for 37 days. Nethery's lawyer argued that his client should be allowed to work to pay for cleanup costs associated with the 2 million cubic yards of trash at the dump, estimated to be as high as \$21.2 million. Sources: Holly Becka, *Dallas Morning News*, 10/31/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 11/4/98

Virginia Landfill Pollution: More than 100 Virginia landfills are leaking pollution into groundwater, according to a top state environmental official. Tests at 168 of 250 landfills show "some apparent contamination" of groundwater. Hassan Vekili, director of waste coordination for the state Dept. of Environmental Quality, estimates that leaking landfills account for 90% of

those cases. Virginia imports approximately 3.2 million tons of garbage per year, second in the U.S. after Pennsylvania. State landfills also bury up to 8 million tons of waste created by Virginians, and state environmentalists are seeking to restrict to the state's trash imports. Sources: Rex Springston, *Richmond Times-Dispatch*, 11/1/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 11/2/98

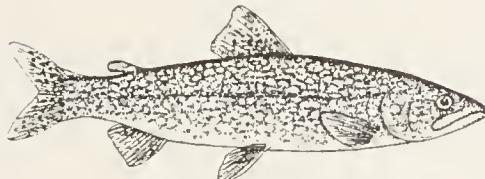
Water Recycling: A \$5 million water-reuse project will take waste water from microchip factories to "green" Albuquerque athletic fields, parks and office complexes by next fall. The project, the first of its kind in Albuquerque, will also supply recycled water to cooling towers and cleaning processes in other local factories. Sources: Tania Soussan, *Albuquerque Journal*, 11/20/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 11/24/98

Willamette River Superfund Listing: "Facing untold millions of dollars" in cleanup costs, a group of private companies and public organizations has "launched an extraordinary campaign to block" a potential Superfund listing for portions of the Willamette River in the Portland harbor. The group, which calls itself the *Portland Harbor Group* and includes the city of Portland, shipyard operator *Cascade General* and the *Port of Portland*, says a Superfund listing for the Willamette "would unnecessarily blacken the reputation of a river Oregon once touted as an environmental comeback." It argues that a Superfund program "would make the cleanup complicated, time-consuming and costly." The Oregon Dept. of Environmental Quality (DEQ) "agrees" and is being paid \$500,000 to write a cleanup plan it would conduct as an alternative. But Nina Bell of *Northwest Environmental Advocates* said, "DEQ's overriding desire to get along with the industries it regulates too often interferes with the job regulators ought to do." The USEPA is set to decide in 5/99 whether to propose the Portland harbor for the Superfund program. Sources: Brent Walth, *Portland Oregonian*, 11/8/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 11/10/98

Wyoming Mining Regs: In a decision that could affect state mining prac-

tices, the Wyoming Supreme Court in early November ruled that topsoil is part of overburden, the material displaced during mining. The Wyoming Dept. of Environmental Quality (DEQ) currently follows industry practice in distinguishing topsoil from overburden and places no annual volume limit on the amount of topsoil which can be removed with a small mine permit. The state Environmental Quality Council recommended that topsoil be included in overburden calculations after having been asked by residents near the *Platte Development Co.*'s gravel mine near Casper to review DEQ requirements on the issue. The court also "suggested the Legislature alter state law to address concerns raised by its decision". Sources: AP/Billings Gazette, 11/8/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 11/9/98

Yellowstone Lake Trout: The recent discovery of non-native lake trout in Yellowstone Lake has created a potential "ecological time bomb" and a possible food-chain unbalance in the region. A single lake trout can eat up to 100 endangered cutthroat trout annually and their presence could affect grizzly bears, bald eagles, osprey, otters, pelicans and about 40 other species in that area that depend on the cutthroat for sustenance.



"Lake trout"

Yellowstone Park Chief Researcher Jim Varley said, "If the lake trout do in the cutthroat and become the bio-mass of note in Yellowstone Lake, they won't provide the same food resources for any of the surrounding species." Scientists believe lake trout were illegally planted in the lake 30 years ago to enhance fishing. Park fisheries pulled 7,000 of the non-native predators out of the lake last summer, up from 43 in 1995. Efforts to eradicate the lake trout -- such as introducing other predators or even poison to the lake -- "are impossible or impractical". Sources: Dan Egan, *Salt Lake Tribune*,

11/8/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 8/20, and 11/9/98

Yellowstone River Flood Control: Critics are warning that the accelerated pace of new flood control projects along the Yellowstone River in Montana amounts to the "piecemeal impoundment of the longest undammed river in the lower 48 states." The Army Corps of Engineers approved 82 riverbank stabilization permits in Park County, MT, between 1995 and 1997, more than twice the number issued in the previous two



"Cutthroat trout"

decades. Back-to-back floods of the Yellowstone in 1996 and 1997 -- the kind expected only once a century -- have driven the projects that include riprap, weirs and dikes. Now "the desire to protect some of the most valuable property in Montana from erosion and flooding" is running "head on" into the desire to keep the Yellowstone untrammeled. The U.S. Fish and Wildlife (USFWS) says the increase in flood-control projects jeopardizes fish and wildlife and threatens to turn the river into "an armored channel." But many landowners argue that the projects do not harm the environment. Rancher and conservation lawyer Andy Dana says public benefits from the bank stabilization projects because they protect ranches where cool-water streams provide critical spawning grounds for cutthroat trout populations. Meanwhile, Montana has formed a task force to assess competing demands on the river, while the Corps is considering a request by the USFWS to stop issuing permits on new flood-control projects. Sources: Tom Kenworthy, *Washington Post*, 10/4/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 10/5/98

Deformed Frogs

A new study on "mysterious and widespread deformities" in frogs found in New Hampshire ponds is "unset-

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the printing of this issue.

The Reader's Survey is located on the back page
instead of this insert.

We refrained from reprinting the entire book
~ *for the sake of a few trees* ~
and would like to assure you that it will be correctly
located in any future issues.

Thank You.

ting," according to Hilary Snook, head of the New Hampshire Dept. of Environmental Services (DES) biomonitoring program. Researchers discovered frogs with multiple appendages, missing eyes and legs emanating from their back. About one out of every 30 frogs studied showed some sort of abnormality. The study, conducted by the DES, U.S. Fish and Wildlife Service and the *University of New Hampshire*, is the first to address the internal makeup of these deformed frogs. USEPA scientist Greg Hillyar is optimistic that the study's findings will be valuable. "This is an environmental sign we should pay attention to. This is a canary in a coal mine", Hillyar said.



Meanwhile, a Canadian researcher's work studying frogs along the St. Lawrence River in Canada and the U.S. "suggests a link" between frog deformities and the use of agricultural chemicals. Martin Ouellet of *McGill University* in Montreal examined nearly 30,000 frogs along a 150-mile stretch of the St. Lawrence River valley over the past seven years. Ouellet found that ponds near land where pesticides, insecticides and fungicides had been applied held frog populations with an average of about 20% deformities. Ouellet said the deformities were in the hind limbs and affected many species that have shown deformities in Minnesota, Wisconsin, and Vermont. In contrast, ponds that Ouellet studied near land with no recent pesticide applications contained frog populations with a 0 to 2% deformity rate. "From an epidemiological perspective, it's quite obvious that there is a problem in sites subject to pesticides", Ouellet said.

Sources: *AP/Concord Monitor*, 10/19/98; *AP/Milwaukee Journal-Sentinel*, 11/5/98; and National

Journal's GREENWIRE, *The Environmental News Daily*, 10/20 and 11/6/98

Dioxin in Asian Food Chain

Dioxin from Agent Orange -- the defoliant sprayed on jungles to uncover enemy hiding places during the Vietnam War -- has contaminated Vietnam's food chain, "creating serious environmental and health problems that demand urgent international attention," a new study says. The study, released on 10/30 by *Hatfield Consultants Ltd.* of West Vancouver, BC, is based on five years of research aimed at identifying the effects of defoliants sprayed on Vietnam from 1962 to 1971. The study, considered "one of the most comprehensive" ever done on Agent Orange, found "high levels" of dioxin in the blood of Vietnamese children born after the war, as well as in fish and animal tissues, indicating that the carcinogen is being transferred through the food chain. The study did not attempt to determine the number of people affected, and the researchers cautioned that further study is needed to establish direct links between Agent Orange and health problems.

The Vietnamese government is expected to use the study to support its claims that the 12 million gallons of chemicals dumped on South Vietnam during the war caused "immense" harm. The Vietnamese government says about 500,000 people have died or contracted serious illness due to the spraying, and about 70,000 people are suffering from mental or physical disabilities due to direct or indirect exposure to Agent Orange. The chemical destroyed about 14% of South Vietnam's forests, according to official U.S. data. The study calls for a public health campaign to ensure that people do not eat contaminated food; further studies on the possible links between Agent Orange and health problems; international assistance in reforestation efforts; and a coordinated effort to clean contaminated land. No information was reported about the study's source of funding. Additional information is available on the Internet at <http://www.hatfieldgroup.com/spotlight/vietnam.htm>.

In a related story, the *San Diego Union-Tribune* reports the U.S. military withheld information about possible links between Agent Orange and birth defects, while it also downplayed the defoliant's link to cancer among Vietnam War veterans. The assertion is based on the newspaper's six-month investigation into a \$200 million Air Force study that tracked the health of 1,000 veterans who participated in sprayings of Agent Orange. The *Union-Tribune* charges that the Air Force withheld "for years" one report that indicated a high incidence of birth defects and infant mortality among the children of those veterans. The newspaper also said the military altered a second report to show little difference in the health conditions of veterans and a comparison group. Col. George Lathrop, who headed the Air Force study in its early years, said the changes in the one report were "minor" and it was better not to release sensitive data from the study prematurely.

Sources: David Lamb, *Los Angeles Times*, 10/31/98; *AP/Washington Times*, 11/2/98; *San Diego Union-Tribune*, 11/2/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 11/2/98

Safe Climate, Sound Business

Executives of *General Motors*, *Monsanto*, *British Petroleum (BP)* and the *World Resources Institute (WRI)* on 10/27 called for reductions in greenhouse-gas emissions and greater support of climate-change research. In a collaboration unveiled at a Washington, D.C. press briefing, the "Safe Climate, Sound Business" partners announced a set of policy recommendations developed over the last 18 months and an action agenda to implement those ideas within their own companies. Among the group's principal conclusions:

- "Climate change is a cause for concern, and precautionary action is justified now";
- "Business can contribute to climate protection efforts in substantial, positive ways by helping to develop sound climate policies, providing the research and technologies needed to address the challenge, and by taking actions to reduce their own emissions"; and

- "Flexible and market-oriented climate policies that implement national commitments ... can effectively build a 'Safe Climate, Sound Business' outcome by stimulating innovation, early actions and cost-effective reductions."

In the next phase of the project, the companies and WRI will:

- Develop a joint protocol for measuring and reporting greenhouse-gas emissions from the companies' global operations;
- Achieve emissions reductions in advance of any regulatory requirements by exchanging best practices and business tools in the areas of energy efficiency, "carbon offsets" and emissions trading;
- Create "strategic business ventures and alliances" to speed climate-friendly action;
- Use purchasing leverage to improve suppliers' energy performance and build market demand for renewable energy;
- Make climate protection an explicit criteria in global business investments; and
- Expand the initiative to involve other companies, environmental groups and governments in policy dialogues.

The project signals yet another effort by some big business leaders to get ahead of the climate change issue. Within the last two months, *Shell* and *BP* have announced plans to reduce greenhouse-gas emissions; earlier this year, *BP* and more than a dozen other companies joined in support of the new *Pew Center on Global Climate Change*, a pro-active think tank. And *BP*, *Shell* and *General Motors* are among 35 companies that recently formed an International *Emissions Trading Assn.* aimed at addressing climate change.

National Journal's GREENWIRE, *The Environmental News Daily*, 10/27/98

Climate Change Update

According to the latest information from the National Oceanic and Atmospheric Administration (NOAA) the 1998 global (land and ocean) mean temperature exceeded the 1997 value by 0.03 °F. NOAA also reported on 10/15 that an iceberg "bigger than Delaware" has broken away from

Antarctica. The "monster berg," called A-38, is 92 miles long, 30 miles wide, and 2,750 miles in area, "considerably larger than average." The average area of most icebergs being tracked by NOAA is a few hundred square miles. The agency regards the break-up of large icebergs from the Antarctic ice shelf as "a possible indicator of global warming".

Meanwhile, "the first accurate measurement" of the Antarctic ice cap shows it is shrinking more slowly than many scientists had believed it would due to rising global temperatures. But the research, which was led by Duncan Wingham of the *University College* in London and which relied on data from remote-sensing satellites, also indicated that oceans may be rising faster than expected through thermal expansion of warming sea water. The findings imply that the average sea level may rise over the next century by as much as a meter. "Many millions of people" live within one meter of sea level. For example, according to the *Coastal Resources Commission*, about 1,000 square miles of the North Carolina coast could be covered by water in the next century if the Atlantic Ocean continues to rise.

A study by *University of Colorado* researchers shows the Earth's climate warmed abruptly to end an ice age 12,500 years ago. The analysis of ice cores from Antarctica shows that a 20°C warming came within a "typical human lifetime". According to USGS researchers, the Chesapeake Bay "has been getting steadily warmer for about 300 years." USGS geologist Stacey Verardo estimated the changes by using sediment sample to count and date fossils of "warm-water-loving" dinoflagellates, single-celled aquatic organisms common from North Carolina to Florida. Over the past 1,000 years, the creatures abundance in bay sediment has nearly doubled, according to Verardo, with the largest increase coming after the 17th century and the Industrial Age. If the warming trend is confirmed, it could mean that some shellfish and aquatic grasses that need colder water could disappear. Additionally, rising water levels could pose a threat to low-lying parts of Maryland. Court Sevenson of the *University of Maryland* said, "This is

not a theoretical exercise." USGS researcher Thomas Cronin says that the study results are preliminary and need to be confirmed by other studies.

According to a study by "UN environmental expert" Cedric Philibert worldwide air travel each year emits nearly the same quantity of greenhouse gases into the atmosphere as the entire United Kingdom economy, and its contribution is expected to increase. In 1995, airplanes emitted 550 million tons of CO₂, a statistic that makes air travel the seventh-largest CO₂ emitting sector. And since 1990, global air traffic has risen by 6.5% a year, with airplanes now accounting for up to 660 million tons of CO₂ a year. The *Organization for Economic Cooperation and Development* predicts that such emissions could triple by 2020, with international air travel alone possibly emitting up to 800 million tons of CO₂. The study concludes that a tax on aviation fuel would be a critical part of any effort to cut such emissions and encourage the replacement of older, less-efficient airplane engines.

As international negotiators continue talks on climate change, they must give greater consideration to the link between global population growth and greenhouse-gas emissions, concludes a report released in early November by *Population Action International (PAI)*, a D.C.-based think tank. The report notes that the world's population has more than doubled in the last 45 years to about 5.9 billion, and it could double again by 2040 if current birth rates continue. Such growth will make it more difficult to curb industrial and vehicle emissions, says PAI's Robert Engelman, the report's author. Engelman adds that the link between population and per-capita greenhouse gas emissions "has been largely passed over and obviously matters critically to the process" of reducing greenhouse-gas emissions. The report recommends that the *Intergovernmental Panel on Climate Change*, a UN-organized scientific panel, include a comprehensive study of the link between population and climate trends in its next report, which is expected in early 2000. It also calls for "social investments" that boost the availability of family-planning services and improve the educational and economic opportunities for women.

"Global warming will have grave consequences for human health and already appears to be a major factor in the alarming spread of infectious diseases," according to an early November report released by the *World Wildlife Fund*. The report concludes that nighttime temperatures are increasing at a faster rate than daytime temperatures, a factor that is particularly disturbing because the range of many disease-transmitting insects is limited by nighttime temperatures. It also indicates that global warming could upset the balance between predators and prey, which could "tip the scales" in favor of the disease-transmitting pests and pathogens that predators typically keep in check.

Human-induced climate change and the extinction of plant and animal species are the world's two most important environmental problems and they are "intricately linked," according to a report released on 11/6 by the D.C.-based *World Resources Institute* (WRI) and *World Conservation Union* (IUCN). The report calls climate change a "major threat to biodiversity," causing species loss and ecosystem destruction. It asserts that protecting species may help mitigate other impacts of climate change. And while it cites greenhouse-gas emissions from the energy sector as the "predominant" contributor to climate change worldwide, forest conversion and other land-use practices are also "significant," contributing nearly 20% of the world's CO₂ emissions. "Failing to address one issue will only exacerbate the problems caused by the other," and steps taken to address climate change can be more effective if undertaken in conjunction with steps to protect biodiversity, according to the report. WRI's Paige Brown, the report's author said, "One of the most important areas yet to be resolved under the Kyoto Protocol concerns how much of a role forests and land-use change will play. They are both a part of the problem and of the solution of climate change." WRI Pres. Jonathan Lash and IUCN Director-General David McDowell, in a joint statement said, "Without a much stronger commitment to solving climate change and biodiversity loss, we will bequeath to our children and grandchildren an irretrievably impoverished world".

According to research by Dept. of Agriculture scientists, "Farmers can help slow down the process" of global warming by practicing no-till and low-till farming techniques that keep carbon in the soil and prevent it from seeping into the atmosphere. Also, atmospheric carbon appears to be increasingly absorbed by regrowth of North American forests and vegetation on abandoned farmland and areas previously logged, according to a team of government and university researchers in a report published in an early November edition of the journal *Science*. The researchers found that levels of CO₂ in the atmosphere have risen less than expected, and measurements taken from across the globe indicate that "the major absorption" is occurring in North America. But environmentalists dispute the

bon uptake may be the result of increased plant growth, spurred by the plants' response either to more carbon or more nitrogen in the atmosphere

Meanwhile, the Clinton Administration on 11/12 signed the Kyoto Protocol on Climate Change, "affirming a crucial American role in a long environmental crusade, but not raising any hope" of Senate ratification in the near future. Pres. Clinton will, reportedly, back up the move within the coming year by launching "new initiatives on federal energy procurement and transportation," setting new energy-efficiency standards for major appliances, spurring clean industrial technologies and promoting the use of carbon "sinks" like forests. The Administration also plans to renew its efforts to "restructure our electricity industry to unleash market forces to boost energy efficiency and reduce emissions."



data, and say that the report could be used to argue against reductions of emissions called for in the Kyoto global climate treaty. David Schimel of the Boulder-based *National Center for Atmospheric Research* said, "There is a huge concern that this research will be misinterpreted." He said the report's data is inaccurate, and that the true amount of carbon absorbed by North America is no more than 700 million tons, rather than the 1.2 - 2.2 billion tons estimated by the new report. NOAA scientist Peter Tans, who worked on the report, admitted "the evidence is still somewhat tentative. But he noted that the researchers "tried to look at all the uncertainties." He speculated that the increases in car-

As expected, the Clinton Administration's signature on the Kyoto Protocol sparked strong reactions from members of Congress and interest groups. Critics of the protocol said it violates a 7/97 Senate resolution authored by Sens. Chuck Hagel (R/NE) and Robert Byrd (D/WV) that said the U.S. should not sign the treaty until developing countries also agree to limit greenhouse-gas emissions. Sen. Larry Craig (R/ID), member of the Energy and Natural Resources Committee said, "The Administration has chosen to ignore economic realities and pursue this misguided political agenda. It appears the president and vice president want to shove this protocol down the throats of the American people". Rep. John Dingell (D/MI) "lashed out" at the Clinton Administration, calling its decision to sign the treaty "pusillanimous". But Sen. Joe Lieberman (D/CT) said the move was essential if the U.S. intends to be a "full player" in future talks.

Environmental group representatives "said the move was the minimum the United States could do to show it is serious about carrying out the ... treaty". Kurt Davies, science and policy advisor to D.C.-based *Ozone Action*, said that although the U.S.'s decision was a welcome move, "people must not mistake U.S. signature of the treaty for leadership". *Environmental Defense Fund* Executive Director Fred Krupp said, "The buildup of

greenhouse gases will not be stopped by the stroke of a pen. The [Clinton] Administration must back up their work to move the negotiations forward". Howard Ris, executive director of the *Union of Concerned Scientists* said, "Signing the treaty is an important step, but reducing pollution at home is the giant leap we need to protect us from global warming".

Business reactions were mixed. Dale Heydlauff, VP of environmental affairs for Columbus-based *American Electric Power* said, "If U.S. industries can seek emissions reductions in the cheapest possible way, particularly through buying pollution credits overseas, the costs of the Kyoto Protocol to the U.S. economy will be manageable". Mark Whitenton, VP for resources at the *National Assn. of Manufacturers* (NAM) said, "Given the complete lack of interest in the developing world to malign their own economies, the Administration's endorsement only reduces what little bargaining power the U.S. has in these negotiations". Connie Holmes, chair of the D.C.-based *Global Climate Coalition* (GCC) said that by instructing the U.S. to sign the protocol, "Clinton has sent the U.S. careening down an endless highway [that] appears on no maps, has no speed limits, no police patrols and no exit or entrance ramps". William O'Keefe, director of the *American Petroleum Institute*, responding to recent overtures by companies to become more proactive on climate change said, "The business community is not split over this treaty. There is no giant movement towards supporting this treaty". Bill Kovacs, VP for environmental policy at the *U.S. Chamber of Commerce* (USCC), says "the Administration's actions will simply amount to unilateral economic disarmament for the United States".

Sources: Curt Suplee, *Washington Post*, 10/16/98; Clive Cookson, *Financial Times*, 10/16/98; AP/Norfolk Virginian-Pilot, 9/26/98; AP/Washington Times, 10/2/98; Heather Dewar, *Baltimore Sun*, 11/5/98; Agence France Presse, 11/6/98; ABCNews.com, 11/4/98; PAI release, 11/1/98; WWF release, 11/5/98; WRI and IUCN joint release, 11/6/98; Matt Kelley, *Omaha World-Herald*, 9/30/98; Randolph Schmid, AP/Richmond Times-Dispatch, 10/16/98; John Cushman, *New York Times*; State Dept. transcript,

11/12/98; John Fialka, *Wall Street Journal*, 11/13/98; Craig release, 11/12/98; CongressDaily, 11/12/98; Bill Cormier, AP/San Francisco Chronicle/Examiner online/others, 11/13/98; Patrice Hill, *Washington Times*, 11/13/98; Ozone Action release, 11/12/98; EDF release, 11/12/98; UCS release, 11/12/98; Laurie Goering, *Chicago Tribune*//*Salt Lake Tribune*, 11/12/98; NAM release, 11/12/98; GCC release, 11/12/98; Anna Bray Duff, *Investor's Business Daily*, 11/12/98; USCC release, 11/12/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 10/2, 10/16, 11/5, 11/6, 11/10 and 11/13/98

Worldwide Water Shortages

Water shortages in parts of the world over the next 25 years will pose the "single greatest threat" to food production and human health, according to a study by *World Bank* VP and agriculture expert Ismail Serageldin. Worldwide, about 80% of water use goes to agriculture, and that demand is increasing. And at a time when 1.3 billion people worldwide lack access to potable water, such scarcity "is likely to be the biggest impediment to food production in developing countries," the AP reports. Serageldin, who also heads the *Consultative Group of International Agriculture Research* (CGIAR) said, "New ways must be developed to take advantage of this diminishing resource if humanity is to feed itself in the 21st Century."

In the U.S., however, "Americans are using less water" even as the U.S. population grows, according to a recent report by the U.S. Geological Survey. The newly released statistics show that the U.S. is using 402 billion gallons/day for all uses, 2% less than in 1990 and nearly 10% less than in 1980, "despite a continuous increase in population over that same time period." Freshwater per-capita use also decreased from 1,340 gallons/day in 1990 to 1,280 gallons/day in 1995. The government "said conservation programs in many communities, improved irrigation techniques and efficient industrial use have helped cut consumption." The largest uses of water were for irrigation and electric power generation.

U.S. Forest Service hydrologist Pamela Case, speaking at a recent Western Regional Instream Flow conference in Copper Mountain, CO, said that water consumption in the West is declining due to more efficient agricultural and industrial practices. She also said that the nearly 33% growth in the population of the West in the last 25 years is expected to continue in the next 25. The conference focused on the effectiveness and consequences of establishing minimum in-stream flows as a means of maintaining river life,

To help improve global water management, the CGIAR has developed a "massive," electronic water and climate atlas. Using the atlas, local farmers, government planners and others can identify areas that could be cultivated with little or no additional irrigation. The atlas, which contains maps of every country, contains data on rainfall patterns, sunlight hours, temperature averages and soil types in various areas. It also indicates where new or different crops could be grown without clearing forests. The atlas, which is currently available on a set of compact discs, is expected to be posted next month on the CGIAR's Internet website at <http://www.iwmi.org>. The project was financed by the U.S. and Japanese governments.

Meanwhile, bottled water drawn from melted Canadian icebergs has won an "enthusiastic" response from consumers, making it difficult for the firm marketing the water to keep up with demand. *Iceberg Industries*, based in St. John's, Newfoundland, became the first firm to sell iceberg water after Ron Stamp, the company's president, pioneered a process to tear chunks off of icebergs, ship the melted water to port and bottle what some call "the cleanest drinking water on Earth." The ice -- broken off from glaciers -- "was formed so long ago it was never exposed to modern-day contamination." To find icebergs for its "Borealis" brand water, the company uses a locator plane and the help of the Canadian Coast Guard's "iceberg patrol." A second firm, "Canada's Original Iceberg Water", is expected to market iceberg water next year under its own label in Europe, Asia and the U.S.

Sources: Randolph Schmid, AP/Washington Times/others, 11/24/98; USGS

release, 10/6/98; *Washington Post*, 10/9/98; AP/*Phoenix Arizona Republic*, 10/11/98; Scott Morrison, *Financial Times*, 11/24/98; National Journal's GREENWIRE, *The Environmental News Daily*, 10/13 and 11/24/98

30% of Earth's Wealth Lost 1970 - Present

The Earth lost almost 30% of its natural wealth between 1970 and 1995, according to the World Wildlife Fund's (WWF) first-ever "Living Planet" report, released on 10/1. The report -- based on environmental data and consumption patterns from 152 countries -- attempts to measure the impact of modern human civilization on the health of the world's forests, freshwater and marine ecosystems. The study focuses on "key areas of consumption" -- grain and meat, marine fish, wood and paper, freshwater, and cement use -- as well as carbon-dioxide emissions, which contribute to the greenhouse effect. The report also offers an index that measures the burden placed on natural ecosystems by humanity.

Among the report's "most alarming" findings is that freshwater ecosystems declined by 50%, marine ecosystems deteriorated by 30% and natural forest cover fell by 10% over the 25-year period. The WWF's Jonathan Loh, one of the report's authors said, "These figures are a stark indication of the deteriorating health of natural ecosystems." The study recommends further controls on fishing and the phase out of fishing subsidies, more efficient water use by farmers, pollution controls and limits on urban growth into the countryside. The report was produced by WWF in association with the *New Economics Foundation* and the *World Conservation Monitoring Centre*, a pair of UK-based organizations. The groups plan to publish the report annually as a sort of "Dow Jones Index of the global environment".

Meanwhile, *Intel Corp.* co-founder and Chair Emeritus Gordon Moore and his wife Betty on 10/2, announced they will contribute \$35 million towards the creation of a biodiversity research center to identify and address emerging threats to the world's "most biologically valuable ecosystems." The

Center for Applied Biodiversity Science, which will be based at the Washington, D.C. headquarters of *Conservation International* (CI), is expected to bring together experts in such fields as science, technology, economics and conservation to develop action plans in response to environmental threats. CI Chair and CEO Peter Seligmann says the center will "serve as an early warning system by forecasting impending biodiversity crises." The center's efforts will parallel CI's strategy to save the world's "highest-priority" biological "hot spots," tropical wilderness areas and marine ecosystems. Specific projects will include stopping the destruction of "pristine" forests



by "international logging conglomerates," and studying the threats to biodiversity in many developing nations posed by mining, logging and other extractive industries. *Harvard University* ecologist Edward O. Wilson will chair the center's advisory council, and Gustavo Fonseca, CI's VP for Brazil programs, will be its executive director.

Sources: WWF release, 10/1/98; AP/*San Francisco Chronicle/Examiner online*, 10/1/98; CI release, 10/2/98; AP/*San Francisco Chronicle/Examiner online*, 10/2/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 10/2/98

Controversial Land Swap

"Congress's approval of a huge land swap in Washington state will prompt more businesses" to similar "shortcuts" around traditional land swap

rules, environmentalists say. Under a provision included in the FY 99 omnibus appropriations bill, Seattle-based *Plum Creek Timber Co.* agreed to swap more than 62,000 acres of land in west-central Washington for 16,500 acres of national forest land. The deal was negotiated by Sens. Slade Gorton (R/WA) and Patty Murray (D/WA), the Clinton Administration, and some environmental groups.

Plum Creek sought Congressional authorization to "avoid lengthy appeals and lawsuits from environmental groups," although *Plum Creek* VP William Brown said the company turned to Congress only after it became clear the company would not meet a deadline for completing the trade administratively. The normal process allows public participation and appeals in U.S. Forest Service decisions. Janine Blaeloch of the Seattle-based *Western Land Exchange Project* said now "more companies may follow *Plum Creek's* lead" by going to Congress, "where Republican leaders have a poor track record of giving environmentalists access."

But Charlie Raines of the *Sierra Club's Cascade Checkerboard Project* said this deal doesn't set a precedent because Congress has approved other land swaps. Raines added that the *Plum Creek* deal was improved after Murray added a 1,500-acre wilderness study area and a 5,500-acre special management area.

Sources: John Hughes, AP/*Vancouver (WA) Columbian*, 11/1/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 11/4/98

Government Spending by State

Rank by Per Capita Total Spending

1	VA	7,857
2	AK	7,715
3	MD	7,683
4	NM	7,192
5	HI	6,966
6	ND	6,758
7	MA	6,110
8	RI	5,954
9	MO	5,868
10	MT	5,840
11	ME	5,784

12	WV	5,733	22	OR	5,454	32	GA	0.99
13	AL	5,687	23	KS	5,453	33	WA	0.98
14	SD	5,622	24	WY	5,413	34	TX	0.98
15	FL	5,600	25	NE	5,412	35	NE	0.98
16	WY	5,509	26	GA	5,405	36	OR	0.93
17	MS	5,503	27	HI	5,332	37	OH	0.93
18	CT	5,463	28	MO	5,332	38	CO	0.92
19	KY	5,440	29	IN	5,321	39	MA	0.92
20	PA	5,434	30	TX	5,217	40	IN	0.90
21	WA	5,404	31	TN	5,197	41	NY	0.86
22	LA	5,321	32	VT	5,155	42	DE	0.83
23	TN	5,320	33	NC	5,121	43	WI	0.82
24	NY	5,272	34	AZ	5,019	44	MN	0.78
25	OK	5,221	35	IA	5,016	45	MI	0.77
26	CO	5,061	36	SD	4,703	46	NH	0.74
27	AR	5,021	37	ME	4,684	47	IL	0.74
28	SC	5,004	38	ND	4,640	48	NV	0.74
29	CA	4,986	39	AL	4,630	49	NJ	0.69
30	NJ	4,910	40	SC	4,558	50	CT	0.68
31	AZ	4,854	41	ID	4,552		U.S.	1.00
32	KS	4,820	42	UT	4,523			
33	GA	4,779	43	KY	4,454			
34	IA	4,753	44	MT	4,383			
35	DE	4,719	45	LA	4,355			
36	NE	4,713	46	NM	4,243			
37	ID	4,696	47	AR	4,230			
38	NC	4,677	48	OK	4,201			
39	VT	4,632	49	WV	3,979			
40	TX	4,544	50	MS	3,881			
41	OH	4,533		U.S.	5,765			
42	OR	4,512						
43	IL	4,440						
44	NH	4,299						
45	MN	4,287						
46	IN	4,283						
47	NV	4,225						
48	MI	4,159						
49	UT	4,097						
50	WI	4,024						
	U.S.	5,133						

Rank by Return on Tax Dollar

1	CT	9,089	1	NM	1.90
2	NJ	7,944	2	ND	1.64
3	MA	7,488	3	WV	1.62
4	NY	6,861	4	MS	1.59
5	IL	6,776	5	MT	1.50
6	MD	6,588	6	VA	1.49
7	NH	6,527	7	HI	1.47
8	NV	6,453	8	AK	1.42
9	DE	6,401	9	OK	1.40
10	WA	6,192	10	ME	1.39
11	MN	6,191	11	AL	1.38
12	CO	6,167	12	LA	1.37
13	MI	6,090	13	KY	1.37
14	AK	6,087	14	SD	1.34
15	VA	5,926	15	AR	1.33
16	PA	5,909	16	MD	1.31
17	FL	5,904	17	MO	1.24
18	RI	5,856	18	SC	1.22
19	CA	5,647	19	ID	1.16
20	WI	5,520	20	TN	1.15
21	OH	5,495	21	WY	1.14
			22	RI	1.14
			23	AZ	1.09
			24	FL	1.07
			25	IA	1.06
			26	PA	1.03
			27	NC	1.03
			28	UT	1.02
			29	VT	1.01
			30	KS	0.99
			31	CA	0.99

Rank by Per Capita Tax Burden

1	CT	9,089	11	AL	1.38
2	NJ	7,944	12	LA	1.37
3	MA	7,488	13	KY	1.37
4	NY	6,861	14	SD	1.34
5	IL	6,776	15	AR	1.33
6	MD	6,588	16	MD	1.31
7	NH	6,527	17	MO	1.24
8	NV	6,453	18	SC	1.22
9	DE	6,401	19	ID	1.16
10	WA	6,192	20	TN	1.15
11	MN	6,191	21	WY	1.14
12	CO	6,167	22	RI	1.14
13	MI	6,090	23	AZ	1.09
14	AK	6,087	24	FL	1.07
15	VA	5,926	25	IA	1.06
16	PA	5,909	26	PA	1.03
17	FL	5,904	27	NC	1.03
18	RI	5,856	28	UT	1.02
19	CA	5,647	29	VT	1.01
20	WI	5,520	30	KS	0.99
21	OH	5,495	31	CA	0.99

Sources: *Northeast-Midwest Institute*, Wash., D.C., staff calculations based on U.S. Department of Commerce, Bureau of the Census, Federal Expenditures by State for FY97; and *The Tax Foundation*, Spec. Rept.: 1997 Federal Tax Burden by State (Washington, D.C.: July 1998).

Religion and the Environment

A two-year series of conferences entitled, *"Can the world's faiths help us get out of the ecological 'predicament' in which we find ourselves?"*, sponsored by Harvard University's Center for the Study of World Religions (HCSR), recently culminated in a four-day interdisciplinary session that drew together spiritual scholars, scientists, economists and policymakers. The Harvard study focused on the role that Buddhism, Christianity, Confucianism, Daoism, Hinduism, Islam, Jainism, Judaism, Shinto and indigenous traditions can play in environmental debates and in influencing public-policy initiatives.

Most conferees agreed that "our predicament is the result of both individual choices and systemic problems." The *Christian Science Monitor* observes, "Larger houses, gas-guzzling vehicles and more frequent air travel are some of the highly damaging choices Americans now prize." Harvard ecologist E.O. Wilson said, "If the rest of the world lived as [Americans] do, we would need two more planet Earths." "Technology won't provide a quick fix. While it has reduced envi-

ronmental impact, that is being erased by increased output and consumption, says Juliet Schor, a *Harvard* economist."

Since 1996, more than 1,000 scholars and activists have been involved in the *Harvard* Project through a "wide-ranging" series of conferences that explored the relationship between the traditions of the world's major religions and the environment. The dialogue indicated that all of the major religions contain principles of abstention and "making due with what's sufficient." Lawrence Sullivan of the HCSWR says such values could be a powerful counterweight to the over consumption and wastefulness that damages the environment. And *Bucknell University* professor Mary Evelyn Tucker says the environment "is a new moral issue that religions need to adapt to."

"Why have religions as a repository of ethics not been a more powerful force" for preventing environmental degradation? the newspaper asks. "Some say consumerism and technology have become a religion," while others say mainstream religions "have not seen the environment as their moral turf." Conferees also questioned whether policy choices, such as those related to global warming, should rely solely on "scientific" evidence. *Smith College* anthropologist Frederique Apffel-Marglin said, "There is a blind belief research will give us answers, but we are dealing with ethical choices".

In its report on the Project to the U.N., *Harvard University* said, "The world's major religions must do far more to provide the 'moral force' behind environmental preservation". The report was released at a late October press conference at the UN headquarters in New York. Religious environmentalists "welcomed the boost" from the Project. Michael Crook of the Indiana-based *Evangelical Environmental Network* said, "They're absolutely right. The church has been silent for too long ... on issues of stewardship of the abundance that God gave us." And Michael McElroy of the *Harvard's Committee on the Environment* "said scientists pushing for policies that ward off mass extinctions, global warming and pollution now could find a powerful new ally in the world's

religions."

But some conservative groups viewed the project as a way of bringing politics into the church. David Ridenour of the *National Center for Public Policy Research* said, "Frankly, we see it as largely a strategy by the environmental movement to broaden their base". The HCSWR plans to continue the dialogue through a forum whose primary goal "will be to influence public policy, develop school curriculums and contribute to scientific and social research on the environment."

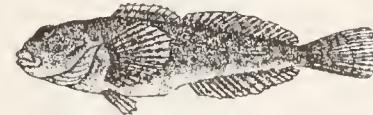
Sources: Jane Lampman, *Christian Science Monitor*, 10/1/98; Edith Lederer, *AP/San Francisco Chronicle/Examiner online*, 10/21/98; Scott Allen, *Boston Globe*, 10/21/98; Bill Broadway, *Washington Post*, 10/24/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 10/1, 10/21, and 10/26/98

Creating a Native Stream Biotope Aquarium

Michael Thennet of Arlington, VA offers the following suggestions as a result of a year long effort to create a harmonious community stream aquarium, populated with various fish species settled in their own little niche. Mr. Thennet evaluated several kinds of community stream biotope aquariums, stocked with a variety of species from Virginia's Potomac and James River drainages. The native species included in his study were darters, sculpins, dace, shiners and even crayfish. He offers the information that follows in the hope that it will help the fishkeeper achieve "a special Zen-like native communal aquarium experience".

His most successful community tank setup was an aquarium about 12 inches high and 24 inches long. Tank height is an important factor during feeding; in taller tanks, sinking food takes longer to reach the bottom, making it more available to the fast mid-level fish species such as dace and shiners. As a result, little food reaches the bottom, thus depriving the slower bottom dwellers like darters and sculpins of their fair share. A shorter tank height allows

enough food to reach the bottom where darters and sculpins can forage successfully. Tank length is another critical parameter, needed to accommodate the territorial tendencies of darters, sculpins, and some breeding male dace. Also, a longer length provides more swimming space for active cyprinids.



"Mottled sculpin"

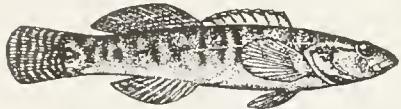
Rocks, and plenty of them, are essential to minimize territorial squabbles between darters and sculpins. This also provides a sense of security for the tank inhabitants. He always gathers rubble, slabs and stones from fish collecting sites to better simulate the community biotope setting. He says to be sure to place the rocks on a layer of gravel, about two to three inches thick, to prevent cracking the aquarium bottom. Rocks from the collecting sites are typically populated with insect larvae, which the fish consume. But he says to always be aware of unwanted stowaways: clean rocks thoroughly with hot water and a brush to rid them of bacteria, fungus, parasites or any other unwanted creatures. He says also that darker colored rocks in an aquarium enhance the colors of fish.

Water current is an important part of a stream biotope tank. Depending on the size of the aquarium, he likes to use one or two hanging power filters. In addition, he recommends attaching (with a suction cup) one or two powerheads to the wall at one end of the length of the aquarium. This generates a current directly across the length of the tank.

The powerhead intake tube should be covered with a small sponge. This provides an additional biological filtration media, and a barrier to keep smaller tank inhabitants from becoming trapped in the powerhead. An air pump is also useful for providing high oxygen saturation in the water and additional water current for the community inhabitants.

Darters and sculpins tend to be the

focal point of his community tanks. Most of his experience has been with the greenside darter (*Etheostoma blennioides*), fantail darter (*E. flabellare*), and mottled sculpins (*Cottus bairdi*). These stream dwellers have a curious rock-hopping tendency that is fascinating to watch. The darters, in particular, are very colorful while in breeding condition. All three species tend to be somewhat territorial, especially among their own kind. For a 20-gallon setup, he recommends no more than three or four individuals, each about two to three inches in length, with no more than one male of each species to minimize squabbles. He recommends starting with smaller-sized sculpins, about one to two inches in length, because larger ones have a tendency to swallow smaller tank mates. When keeping sculpins, a cool water species, he says that water temperature should be about 70°F or less. It should be noted that the use of powerheads may increase tank temperature.



"Fantail Darter"

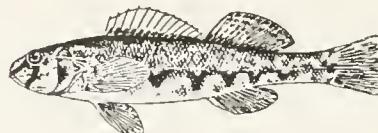
He says that dace and shiners help to provide security for the usually shy darters and sculpins that would otherwise hide among the rocks. They also fill the upper and midwater levels of the community tank with activity. Most of his experience with these kinds of fishes have been with blacknose dace (*Rhinichthys atratulus*) and longnose dace (*R. cataractae*). Both species are very hardy. The presence of these active cyprinids assures darters and sculpins that it's safe to come out and explore their surroundings. He says that no more than four dace or shiners should be placed in this setup; a larger group jeopardizes the food supply of darters and sculpins at the bottom. Cyprinids do very well in small groups and always get enough food. His blacknose dace even supplement their diet by grazing on the algae growth covering the rocky habitat.

He says that clean-up duty in this type of community tank falls to the ever-faithful common crayfish (*Procambarus sp.*). He finds it ex-

tremely entertaining to watch them go about their chores industriously, like miniature underwater cranes. He recommends starting with specimens about one to two inches in length that will keep them from inflicting serious injury on other small tank mates. He says he has a three-inch specimen which has yet to claim a fish, but this may also be due to his accidentally amputating, while cleaning the tank, its right claw (still in the process of growing back). The crayfish diligently scavenges uneaten food. He points out that aerating the water and providing adequate lighting in the tank promotes the growth of plants and algae. This vegetation is also relished by the crayfish that grazes on the plants and excess algae keeping the tank virtually spotless and well groomed. If fed well, he says, the crayfish will generally leave its tank mates alone-as long as they stay out of its way!

He says that maintaining such a setup is relatively simple. He feeds his fish once every other day; *spirulina* flakes, mainly to stuff the dace, and one or two cubes of frozen bloodworms and/or brine shrimp, mainly for the darters and sculpins. For a 20-gallon tank, he says that a partial water change, about five gallons, should be done every two weeks. The changeable filter media should also be replaced at least once a month.

He recommends keeping a watchful eye on the bellies of the darters and sculpins to make sure they're getting enough food. Also inspect all tank inhabitants for telltale signs of damage, possibly inflicted by larger crayfish. Remove overly aggressive fish and/or crayfish.



"Greenside darter"

He says that common sense and logical application of the suggestions outlined above should provide you with a harmonious community tank, which includes not just one or two, but many facets of the stream ecosystem. Essentially, with all the

different characters involved in the community, it becomes much easier to become one with the stream. "Create it, realize it, and love it!"

Mr. Thennet, a member of the *North American Native Fishes Association* (NANFA), provided this useful information in the group's newsletter, *American Currents*. In addition to the newsletter, the group provides information through an email network. More information on NANFA and how to subscribe to their newsletter can be obtained by contacting NANFA at P.O. Box 2304, Kensington, MD 20891 or through their Website at <http://www.nanfa.org>.



"Blackside dace"

Potential native fish aquarium enthusiasts are cautioned that before attempting to capture or keep any native fish species they should contact their state game and fish management agency for information on laws and regulations governing this activity. When done within the law, the keeping of a native stream fish aquarium can be a very educational and rewarding experience.

Source: *American Currents*, Vol. 24, No. 3, Summer 1998

Rivers Project 1999 Summer Training

The *Rivers Project* of *Southern Illinois University* at *Edwardsville* (SIUE) has announced its 7th annual summer training sessions for teachers. All middle and high school teachers are invited to attend and help achieve the goal of "increasing scientific literacy through river study". Six subject areas (biology, chemistry, earth science, geography, language arts, and mathematics), developed under a grant from the *National Science Foundation*, are available. Teacher trainees will choose a main subject area of study, but, by the week's end, all trainees will have received instruction in each subject area. Due to this instructional design, the *Rivers Project* strongly encourages the

participation of interdisciplinary teams.

Teacher training sessions are being planned in Chicago, the Smoky Mountains, and at the SIUE campus in Edwardsville, IL.

The Chicago session will be held on the campus of *North Park University* in Chicago, IL in cooperation with the *Friends of the Chicago River*. Here, teachers will meet in an urban setting and perform river-related activities both inside the college classroom and in and along the banks of the Chicago River. Relevant field trips will also occur.

The Edwardsville, IL session is held annually on the campus of SIUE which also happens to be the home of the *Rivers Project*. Edwardsville, is a small community located 30-minutes from the city of St. Louis. Though close to the banks of the Mississippi River, the seminar will focus primarily on the more rural, Southwestern streams of Illinois. Past field trips include trips to Alton Locks and Dam 26, the Mississippi Riverfront, a dinner cruise on a Mississippi River boat, and Illinois Caverns.

The most recent addition to the annual session line-up is the Smoky Mountains location. Because this will be the first time in the National Park, current information is unavailable.

Seminar dates and details are still being negotiated for all 1999 summer sessions. Interested persons should periodically check the *Rivers Project* Web Page for updated information and details at: <http://www.siu.edu/OSME/river>

Also available through the *Rivers Project* are several educational activities that focus on the grim economical and ecological effects of the Zebra mussel infestation. Available for purchase are an:

- Alien Invaders Curriculum Unit;
- Zebra Mussel Investigation Unit for Middle School students;
- Zebra Mussel Monitoring Device;
- monitoring device appropriate for any age level; and
- Zebra Mussel Mania Traveling Trunk, which includes the Zebra Mussel Mania curriculum guide for Middle School and the necessary supplies to perform all activities.

The Zebra Mussel Mania Traveling Trunk was developed through a grant from the *Illinois-Indiana Sea Grant* and can be borrowed from several lending centers. The location of these lending centers can be found on the *Rivers Project* Web Page. For more information about borrowing this kit or purchasing it or other Zebra mussel materials please contact: The *Rivers Project*, (618) 650-3788, rivers@siue.edu, or visit the web page at <http://www.siu.edu/OSME/river>.

Correction

The *Wetland Initiative's* new Illinois River Restoration Project discussed in the July/August issue of *River Crossings* gave credit for the Project to the *Illinois River Strategy Team*. We were reminded that although the subject project is supportive of the goals of the Strategy Team, the project itself was funded privately through the *Wetlands Initiative* project. The most important funders were Sue and Wes Dixon. We apologize to the *Wetlands Initiative* and the Dixons for the error.

Meetings of Interest

February 18-20: 3rd Annual American Wetlands Month Conference: Communities Working for Wetlands, New Orleans, LA. Conference will feature hands on, interactive workshops where participants will learn how to solve their own wetland problems. Contact: Terrene Institute, 4 Herbert St., Alexandria, VA 22305, (703) 548-5473, FAX (703) 548-6299, or terrconf@erols.com.

March 2-4: International Symposium on Geographic Information Systems in Fishery Sciences, Seattle, WA. Contact: Tom Nishida, 011/81-543-366043, tnishida@enyo.affrc.go.jp

March 3-4: Applied River Geomorphology and Biotechnical Engineering Workshop, Horizon Convention Center, Muncie, IN. Understanding and managing watersheds and streams as parts of a fluvial system - structural integrity of fluvial systems, and basic hydraulic geometry. Sponsored by the Indiana Chapter of the Amer

ican Fisheries Society. Contact: (765) 285-8845 or (765) 285-8825, tmccomis@bsu.edu or tlauer@bsu.edu.

March 16-19: Ecosystem Effects on Fishing, Montpellier, France. Contact: Henrik Gislason, 011/45-33963361, hg@dfu.min.dk

March 17-19: Freshwater Mollusk Conservation Society 1st Annual Symposium, Clarion Hotel, Chattanooga, TN. Contact: Paul Johnson, (423) 785-4074, pdj@tennis.org, <http://www.sari.org>.

March 21-24: Sustaining the Missouri River for Future Generations, 3rd Annual Missouri River Conference, Ramkota Inn River Centre, Pierre, SD. The conference provides a forum for researchers, resource managers, and citizens from all river interests to discuss the future of this unique river system. Contact: Jeanne Heuser, USGS-BRD, Environmental and Con-

taminants Research Center, 4200 New Haven Road, Columbia, MO 65201, (573) 876-1876, FAX (573) 876-1896, jeanne_heuser@usgs.gov.

March 22-27: Wetlands Engineering and River Restoration Conference, Denver, CO. Sponsored by the American Society of Civil Engineers. Contact: ASCE, Conferences and Expositions, P.O. Box 832, Somerset, NJ 08875-0832, (800) 548-ASCE w/in the U.S., and (703) 295-6050 outside the U.S., or FAX (703) 295-6333.

March 26-30: 64th North American Wildlife and Natural Resources Conference, Hyatt Regency San Francisco Airport, Burlingame, CA. Contact: Richard McCabe, (202) 371-1808.

April 6-8: Environmental Monitoring and Assessment Program Symposium on Western Ecological Systems: Status, Issues, and New Approaches, Holiday Inn Fisherman's Wharf, San Francisco. Contact symposium coordinator, (781)

544-0026, symposium@tpmc.com.

April 12-15: EPRI Conference on Power Plant Impacts on Aquatic Resources, Renaissance Waverly Hotel, Atlanta, GA. Contact: Cindy Layman, Conference Coordinator, P.O. Box 10412, Palo Alto, CA 94303-9964, (650) 855-8763, or FAX (650) 855-2166.

April 22-23: Mississippi River Research Consortium Annual Meeting, Yacht Club Resorts, La Crosse, WI. Contact: Richard Anderson, (309) 298-1553, randerson@wiu.edu.

May 16-19: National Watershed Coalition's Sixth National Watershed Conference, Austin, TX. Conference theme is "Getting the Job Done at the Ground Level". Contact: John W. Peterson, Executive Director, National Watershed Coalition, 9304 Lundy Court, Burke, VA 22015-

3431, (703) 455-6886, FAX (703) 455-6888, jwpeterson@erols.com.

May 23-28: 10th International Soil Conservation Organization Conference - Sustaining the Global Farm, Local Action for Land Stewardship, Purdue University, West Lafayette, IN. Contact: Mark Nearing, Purdue University, 1196 SOIL Bldg., West Lafayette, IN 47907-1196, (765) 494-8673, FAX (765) 494-5948, isco99@ecn.purdue.edu.

April 26-30: 9th International Zebra Mussel and Aquatic Nuisance Species Conference, Duluth Entertainment Convention Center, MN. Contact: Elizabeth Muckle-Jeffs, (800) 868-8776, profedge@renc.igs.net.

May 9-14: 15th International Symposium on Biotelemetry, Juneau, AK. Contact: John H. Eiler, (907) 789-6033, john.eiler@noaa.gov.

May 13-14: 26th Annual Conference on Ecosystem Restoration and Creation, Tampa, FL. Contact: Frederick J. Webb, (813) 757-2104, webb@mail.hcc.cc.fl.us.

May 25-28: 47th Annual Meeting of the North American Benthological Society, Duluth, MN. Contact: Stephen W. Golladay, (912) 734-4706, http://www.benthos.org.

June 1-4: Evaluating the Benefits of Recreational Fishing, The Fisheries Centre, University of British Columbia, Vancouver, BC. Contact: Gunna Weingartner, (604) 822-0618, events@fisheries.com.

August 29-Sept. 2: 129th Annual Meeting of the American Fisheries Society, Adam's Mark Hotel, Charlotte, NC. Contact: Betsy Fritz, (301) 897-8616, ext. 212, bfritz@fisheries.org

Congressional Action Pertinent to the Mississippi River Basin

Clean Water

S. 2620: Sen. Chuck Robb (D/VA) to establish a fund to carry out projects to promote the recovery of U.S. waters.

Conservation Reserves

H.R. 4394: Rep. Collin Peterson (D/MN) to establish temporary enrollment priorities for the Conservation Reserve Program.

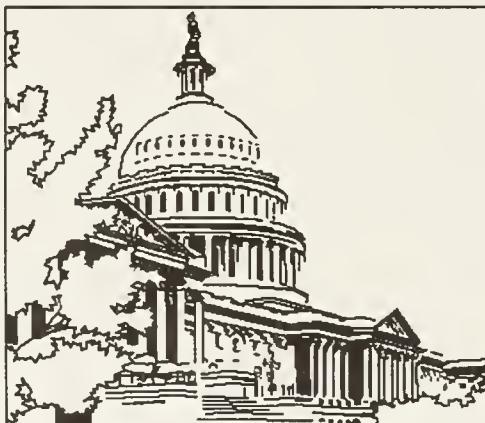
Endangered Species

S. 1180: Efforts to move this comprehensive bill to reform the Endangered Species Act, continued right up until the closing days of the congressional session. The bill, introduced by Sen. Dirk Kempthorne (R/ID), enjoyed wide support, including the critical endorsement of the Clinton Administration, but the numerous attempts to take the bill to the Senate floor, either as a stand-alone bill or attached to another bill, failed. Environmentalists, many of whom opposed S.1180, were pleased at the inability to move the bill.

H.R. 4335: Rep. Don Young (R/AK) authored H.R. 4335 to consolidate ESA responsibilities now shared by the National Marine Fisheries Service and

U.S. Fish and Wildlife Service.

H.R. 4554, H.R. 4555, H.R. 455: Rep. William Thomas (R/CA) to reform the regulatory process under ESA and land management activities.



Environmental Education

S. 2359 was introduced by Sen. James Inhofe (R/OK) to amend the National Environmental Education Act to extend the programs.

Environmental Justice

H.R. 4584: Rep. John Lewis (D/GA)

to promote environmental justice and pollution reduction efforts.

Farmland Protection

S. 2596 and S. 2597: Sen. Robert Torricelli (D/NJ) to improve the farmland protection program.

Land Conservation

H.R.4496 provides tax incentives for land sales for conservation purposes.

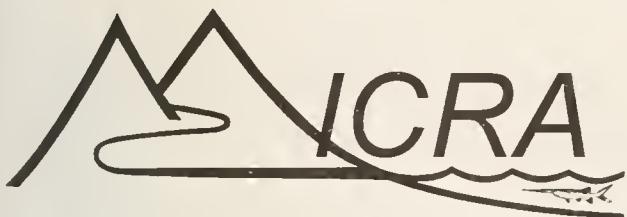
Mining

H.R.4356: Rep. Philip English (R/PA) to amend the Surface Mining Control and Reclamation Act to ensure that the full amount deposited in the abandoned mine reclamation fund is spent to carry out the intentions of the fund.

Public Lands

S. 2414: Sen. Conrad Burns (R/MT) to set up terms for the Interior Secretary to convey leaseholds in certain properties around Canyon Ferry Reservoir in Montana.

S. 2555: Sen. Tom Daschle (D/SD) to deauthorize the Blunt Reservoir feature of the Oahe irrigation project in



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READER'S SURVEY

January 1999

This biannual "Reader's Survey" is an effort to identify our regular readers, to streamline our mailing list in order to reduce printing and postage costs, and to better serve our readers by soliciting their views. In order to ensure that your name remains on our mailing list, please answer the questions below and return this form to our office at your earliest convenience (preferably before January 30, 1999). If you do not respond we will assume that "River Crossings" is not being read, and your name may be dropped from our mailing list. We look forward to hearing from you, and especially appreciate receiving your written comments. Thank you for your assistance and continued interest in river issues.

Sincerely,

Jerry L. Rasmussen
Executive Secretary/Coordinator

I enjoy reading "River Crossings", and wish to remain on your mailing list.

I do not wish to remain on the "River Crossings" mailing list.

Additional Comments: _____

South Dakota and direct the Interior Secretary to convey some land to

Public Lands.

H.R. 4505: Rep. David Skaggs (D/CO) to designate lands in the Arapaho and Roosevelt national forests in Colorado as wilderness.

H.R. 4469: Rep. Rick Hill (R/MT) to set up terms for the Interior Secretary

to convey leaseholds in certain properties around Canyon Ferry Reservoir Montana.

H.R. 4467: Rep. Richard Gephardt (D/MO) offered H.R.4467 to amend the Land and Water Conservation Fund Act of 1965 to provide for a secure source of funds for federal land acquisition and state matching grants, and the Urban Park and Recreation Recovery Act of 1978 for

state, local, urban conservation and recreation needs.

Water Reclamation

H.R. 4389 would provide for conveyance of various reclamation project facilities to local water authorities.

Source: Land Letter, Status Report, Vol. 17, No. 20, 10/30/98 and Vol. 17, No. 18,



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River Crossings

NATIONAL RIVER SURVEY

Volume 8

January/February 1999

Number 1

UMR Navigation Expansion

Historically, expansion of commercial navigation capacity on our Nation's rivers has kept up with technology. Advancement from the relatively shallow draft paddle wheelers of the Mark Twain era to the more powerful, deep draft (12 ft.) tows of today, lead to increased demand, deeper channels, and larger locks. All of this expansion, completed at taxpayer expense, took a heavy toll on the natural ecosystems of most of our large interjurisdictional rivers, converting many of them from diverse riverine ecosystems into single purpose rock-lined channels.

This held true across most of the Inter-continental Waterway System. However, on the Upper Mississippi River (UMR) citizens chose to stand fast against unconstrained navigation capacity expansion in favor of preserving a higher quality river ecosystem. Perhaps the reason for this is that the UMR provides a natural oasis in the middle of a "sea of agricultural lands", and forms the focus of regional recreational, ecological, and natural heritage values. For example, the UMR supports a National Fish and Wildlife Refuge complex that is the longest such refuge system in the Nation, attracting millions of visitors annually. This refuge was established in 1924 by local chapters of the Izaak Walton League of America (Ikes) - six years before the present day navigation locks and dams were proposed.



View of the Upper Mississippi River (UMR) at Pike's Peak State Park (IA) overlooking Prairie du Chien, WI.

Congress recognized these values in the mid 1980's when they designated the UMR as a "nationally significant ecosystem" -- putting it on equal status with the River's nationally significant navigation system. At that time Congress also authorized and funded a

UMR Environmental Management Program (EMP), which today is working to restore riverine habitats and ecological processes that have been damaged by the aging process of the navigation pools, and by the direct impacts of the operation and maintenance activities necessary to maintain a reliable 9-foot navigation channel.

However, despite the good that has been done to maintain UMR environmental quality, the push continues to expand navigation capacity. It seems as if navigation boosters have a never-ending appetite for expansion, and show little concern for the effects of their actions on the environment. The two interests (environment and navigation) thus remain at odds on the UMR -- only giving way to compromise when the

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interests of one comes into obvious and direct conflict with the other. For example, the EMP was only authorized and funded in 1986 after navigation interests gave way to environmental demands in order to win authorization and funding for construction of a new and larger lock at Alton, IL (Lock and Dam 26). Reconstruction of that lock cost the American taxpayer \$1 billion in early 1980's dollars and more than doubled its capacity -- the environmental trade off was the 10-year, \$300 million EMP. Environmental interests had held fast against reconstruction of Lock 26 because they felt it was the "keystone" to expansion of navigation capacity upstream. Once it was rebuilt they felt the "bottle-neck" would just be shifted upstream, and one by one - domino fashion - the other upstream locks would need to be expanded until capacity on the entire system was increased.

It seems that those concerns are coming true. It's now time for reauthorization of the EMP and navigation interests are seeking yet another navigation expansion. This time for increasing the capacity of numerous navigation locks from 600 ft. to 1200 ft. - doubling their capacity as predicted in the 1980's, while at the same time doubling the potential impacts on the environment.

In this case, however, navigation interests have experienced a temporary set back. The U.S. Army, Corps of Engineers (Corps) has determined in an early report that large-scale rebuilding of the navigation locks isn't worth the money. This may, however, be only a temporary setback because the Corps' chief project economist, Paul Soyke, said in December that the report only provides a preliminary conclusion and that a later determination could find lock reconstruction economically feasible.

Soyke said that the Corps needs more information on how up-and-down commodity prices affect demand for barge traffic. Further, he said, that the Corps would ask commodity and farm groups for that information, a move which environmentalists question. "Now that they've run the data through their model, they're unhappy with the results," said Mark Beorkrem, a *Sierra Club* volunteer monitoring the lock study. "So they're going back to

the groups that'll benefit and asking for better numbers. They might as well be cooking the books."

But Ross Korves, deputy director of public policy for the *American Farm Bureau*, said Soyke asks a good question. Commodity prices at the export elevator don't change despite the cost of transportation, he said, "If we can move a bushel of grain by barge at 40 cents a bushel, or if we can move it by rail at 70 cents a bushel, that means 30 cents more a bushel in the pocket of the producer."

According to the Corps' preliminary economic study, increasing the length of locks to permit more barge traffic would not be economically justified until after 2020. However, small-scale measures such as helper boats and mooring buoys, would be immediately justified. Also, construction of "guidewalls" at locks 20 through 25

may also make economic sense.

Of critical concern is the fact that none of these findings include the environmental costs of traffic expansion. "If the environmental costs of additional traffic are substantial, then the time when longer locks are economically justified is even further away," said Scott Faber, a spokesman for *American Rivers*. The Corps still has a long way to go. But, the preliminary findings support what many have suspected for months -- longer locks are not economically justified, and we should instead be focusing on the economic and environmental implications of small-scale measures."

While most UMR locks are 600 feet long, tows typically push 15 barges which are 1,200 feet long. This forces tow operators to lock through in two steps -- a process which can take up to two hours. Eight of the 29 UMR

River Crossings

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River Crossings is a mechanism for communication, information transfer, and coordination between agencies, groups and persons responsible for and/or interested in preserving and protecting the aquatic resources of the Mississippi River Drainage Basin through improved communication and management. Information provided by the newsletter, or opinions expressed in it by contributing authors are provided in the spirit of "open communication", and do not necessarily reflect the position of MICRA or any of its member States or Entities. Any comments related to "River Crossings" should be directed to the MICRA Chairman.

locks were identified by the Corps as being among the 20 locks in the Nation with the highest average delays. Navigation boosters would like to expand the length of 7 of these locks -- 5 on the UMR and 2 on the Illinois River. Barge delays already cost shippers \$35 million a year, according to the Corps, and those costs will increase as barge traffic grows to 155 million tons by the year 2050.

But no one really knows what the economic future will bring. We do know, however, that navigation projects impact the environment in numerous ways, and that the river has only a limited capacity to absorb these environmental perturbations before it loses its ecological integrity. One has to only compare the UMR with one of its tributaries -- the greatly impacted Illinois River -- to see the differences between a moderately and a significantly impacted river. Unfortunately, the UMR's capacity for recovery is not known -- most studies that have been needed and requested to determine and measure the impacts of navigation expansion have not been funded. It seems as if some decision makers are more comfortable not knowing the "condition of the patient" than in "diagnosing and treating the disease".

Compounding that problem, is the reality that navigation boosters have little economic conscience when it comes to meeting their appetite for ever-increasing navigation capacity. This is because the taxpayer continues to foot most of the bill. Although a tax is currently levied on towboat fuel, the amount collected falls far short of the amount needed to replace navigation infrastructure.

Until cost shares and public subsidies for commercial navigation, flood control, and other river impacting activities place more of the economic burden on project sponsors and direct beneficiaries, and less on the taxpayer and the river, there is little hope that the unrealistic demands being placed on our Nation's river ecosystems will lessen.

Source: Christopher Thorne, Associated Press Writer and Staff Writer Ginger Vanderpool, *Mississippi Monitor*, January 1999

Fishes in Navigation Channels

"Expansion of the capacity of the Upper Mississippi River System to support commercial navigation created the need to develop information on potential effects of commercial navigation on fishes. Total densities of larval fishes in the navigation channels generally did not exceed 3 fish/m³ and tended to be greater in the lower Illinois River than in nearby Pool 26 of the Mississippi River. Larvae of common carp *Cyprinus carpio* and catostomids predominated in May but in June were replaced by clupeids, primarily gizzard shad *Dorosoma cepedianum*. Finally, freshwater drum *Aplodinotus grunniens* larvae predominated ichthyoplankton drift in late June and early July. Total minimal densities of fish longer than 10 cm total length



Lake sturgeon found floating in UMR Pool 15 in the 1980's, apparently the victim of injury by a large propellor.

averaged 157 and 177 fish/ha during 1996 and 1997, respectively, in the lower Illinois River, and 109 and 55, respectively in Pool 26 of the Mississippi River. The assemblage of these larger fishes was dominated by freshwater drum, gizzard shad, channel catfish *Ictalurus punctatus*, and smallmouth buffalo *Ictiobus bubalus*. Additionally, shovelnose sturgeon *Scaphirhynchus platorhynchus* were common in the upper portion of Pool 26, but totally absent from the Illinois River. The core assemblage of larval fish taxa and larger fish species present in Pool 26 of the Mississippi River and

in the lower Illinois River was similar between years, but substantial variability in seasonal timing of appearance and in observed density of these fishes in the navigation channel exists. However, due to the short duration of the study, the potential magnitude of year-to-year changes in the density and seasonal appearance of fishes in the navigation channel could not be determined, leaving substantial uncertainty as to how representative the estimates of entrainment losses might be.

"Results from 41 entrainment samples suggest that an average of 9.5 adult gizzard shad are killed or seriously injured by entrainment through towboat propellers per kilometer of tow travel, with an 80% confidence interval of 3.8-22.8 adult fish/km of tow travel. The utility of this estimate is limited by the substantial width of the confidence interval and the short duration of the study, which included only one fall-winter period. Entrainment kills were observed only during the fall and early winter of 1996, suggesting a seasonal effect, but lack of seasonal replication leaves this uncertain. Because gizzard shad were the only species observed killed in the entrainment sampling, this estimate also represents the total kill for all species within the entrainment sampling design. However, in 110 ambient samples, which were conducted to estimate abundance of live fish, fresh entrainment kills of one adult smallmouth buffalo and one adult shovelnose sturgeon were also observed. This result is entirely plausible because rarer entrainment kills might go undetected in 41 entrainment samples, but show up in the more numerous ambient samples. The ambient samples were more numerous because, given the prevailing traffic rates and logistic constraints, approximately 2-3 ambient samples can be completed for each entrainment sample. A statistical method was developed to estimate the entrainment mortality rate for shovelnose sturgeon and smallmouth buffalo from the combined entrainment and ambient samples. These ancillary entrainment mortality estimates for shovelnose sturgeon and smallmouth buffalo are each 2.4 adult fish/km of tow travel, with 80% confidence intervals of 0-6.0 fish/km of tow travel. This ancillary mortality estimator is shown to be essentially

unbiased. Because the confidence intervals for these species include zero, it is reasonable to conclude only that entrainment mortality cannot be eliminated as an important component of their dynamics in the navigation channels of the Upper Mississippi River System. The ancillary estimates create a paradox because there are now two estimates of the total entrainment mortality rate for all species combined. The first is the estimate of 9.5 fish/km from the entrainment sampling, which is unbiased within that sampling design. The second is the sum of entrainment-sampling estimate plus the ancillary estimates for shovelnose sturgeon and smallmouth buffalo. This second augmented mortality estimate is 14.3 adult fish/km of tow travel with an 80% confidence interval of 0-26.7 fish/km of tow travel."

Using the second augmented mortality estimate immediately above, we can say that a typical tow traveling from St. Louis to the Twin Cities (670 mi. or 1081 km.) might be expected to kill 15,458 adult fish (with an 80% confidence interval of 0 to 28,863 fish).

Source: *Abundance of Fishes in the Navigation Channels of the Mississippi and Illinois Rivers and Entrainment Mortality of Adult Fish Caused by Towboats*; Steve Gutreuter, U.S. Geological Survey, Upper Midwest Environmental Sciences Center, 2630 Fanta Reed Road, La Crosse, Wisconsin 54603; John M. Dettmers, Illinois Natural History Survey, Lake Michigan Biological Station, 400 17th Street, Zion, Illinois 60099; and David H. Wahl, Illinois Natural History Survey, Kaskaskia Biological Station, R.R. 1, Box 157, Sullivan, Illinois 61951. *Abstract of Project Completion Report*, 7 December 1998, Submitted by the U.S. Geological Survey and Illinois Natural History Survey to the U.S. Army Corps of Engineers in fulfillment of Contract Number NCR-94-175.

Caviar Bust/ Sturgeon Fingerprinting/Meat

The U.S. government on 12/18/99 indicted three people on charges of smuggling millions of dollars worth of endangered sturgeon caviar from Poland to New York, in violation of the Convention on International Trade in

Endangered Species of Wild Fauna and Flora (CITES). Eugeniusz Koczek and Wieslaw Rozbicki of the Stamford, CT-based *Gino International* and Andrzej Lepkowski of Warsaw, Poland, were each charged with seven counts related to smuggling endangered wildlife into the U.S. The federal indictment is the first to enforce a new provision in CITES listing caviar-producing sturgeon as an endangered species.

Economic turmoil in the former Soviet Union and rising U.S. demand for caviar have conspired to create tough times for sturgeon, the ancient fish from which the tasty fish eggs are harvested. Overfishing in the Caspian Sea, where most of the world's caviar originates, has driven many of the sturgeon's 25 species close to extinction. Several nations, however, are working to devise quotas that will protect the fish. Overall, U.S. caviar imports have doubled since 1991.

In anticipation of new rules, scientists are turning to the fish equivalent of DNA fingerprinting to determine which species is contained in any given caviar sample. Researchers from the *American Museum of Natural History* in New York described the approach in the August issue of *Conservation Biology*. "I think if Caspian sturgeon can be saved, it's through the establishment and adherence of species-level quotas," says Stephen R. Fain, genetics supervisor at the U.S. Fish and Wildlife Service's (FWS's) forensics laboratory in Ashland, OR. Genetic tests will help investigators track harvested eggs from individual species and detect poaching, he says. To trace caviar's origin, scientists cannot rely on sight alone. Traders market the salty delicacy in only three major categories--beluga, sevruga, and osetra (or Russian) -- distinguished by egg size. Certain species tend to produce eggs of a given size and are traditionally included in a category. Taste is not a reliable indicator of species, says Vadim J. Birstein, a coauthor of the *Conservation Biology* report.

The scientists say they sampled 95 lots, mostly purchased in New York City stores, and found that about 25% contained species of sturgeon different from those that buyers would expect. These included three lots of beluga, which can fetch prices of \$90 an ounce. Unless they use genetic testing, importers can be tricked by their suppli-

ers, Birstein says. However, after examining 105 samples purchased on the East and West Coasts, Fain suggests that only about 3% of the lots are mislabeled. According to Fain and Frank Chapman, a sturgeon researcher at the *University of Florida* at Gainesville, categories of caviar can legitimately contain more than one species, so Birstein and his colleagues may have overstated the degree of mislabeling. Birstein retorts that each of the major categories should contain eggs of only one species.

Birstein told *Science News* that he and his colleagues offered their test to the FWS, which monitors U.S. imports for compliance with the new international rules. However, they asked the agency to pay royalties for the use of the technique's patented parts, which identify DNA sequences unique to certain sturgeon species. The agency instead developed its own test, which is based on sequencing one section of DNA common to all sturgeon species, says Kenneth W. Goddard, director of the forensics lab. This approach, yet to be published, uses characteristic variations in the genetic code to identify individual species. The agency wanted a tool it could share with enforcement agencies in other nations without bothering with fees, Goddard says.

On another "sturgeon front", FWS officials on 12/10/98 found, during a routine inspection of airline manifests, that a hotel in Las Vegas, NV had imported a commercial shipment of sturgeon meat (171 lbs.), valued at \$4,126. The air waybill listed "smoked salmon" which, as seafood for human consumption, is exempt from regulations. However the supporting invoice listed "sturgeon", thus negating the seafood exemption. Chicago is one port in the country that routinely reviews airline manifests for undeclared wildlife. The sturgeon was illegally exported by a company in Seattle.

Sources: Molly O'Neill, *New York Times*, 12/19/98; *Baltimore Sun/others*, 12/19/98; National Journal's GREENWIRE, *The Environmental News Daily*, 12/21/98; Jeffrey Brainard, *Science News*, Vol.154(8):116, 8/22/98, and *USFWS Region 3 Staff Notes*, 1/21/99

Bighead Carp Gamefish or Nuisance

A homely fish most people have never heard of has suddenly gained a degree of prominence in Arkansas (and elsewhere). The bighead carp, an Asian import used to control aquatic vegetation, is known to be present in modest numbers in the Arkansas and White rivers; and in growing numbers in the Upper Mississippi and Missouri rivers. The fish is also getting attention from some fish and nutrition advocates as a possible replacement for tuna, since tuna numbers are declining in the oceans.

On 4/3/98, Jeff Hamrick of Little Rock set a new Arkansas record, when he caught a 50 lb., 7 oz. bighead carp by snagging below Murray Lock and Dam on the Arkansas River at Little Rock. Hamrick's fish broke the record of 47 pounds set by Michael Scott Perrigan of Jacksonville, also taken by snagging just below Murray Lock and Dam on the Arkansas River.

Hamrick's friend, Cody Wheeler, also caught a 40-pound bighead carp on the same outing. This was just a day after another angler brought a 43-pound, 5-ounce bighead to Arkansas Game and Fish Commission headquarters for a try at the state record. It, too, came by snagging on the Arkansas River. Wheeler had his appetite whetted. After the record weighing and certifying process was completed for Hamrick at Game and Fish Commission headquarters, Wheeler went fishing again and caught another bighead carp. This one also was taken to the Game and Fish building, and it weighed 48 pounds, 10 ounces, falling short of Hamrick's new record by less than two pounds.

Meanwhile, researchers from the U.S. Department of Agriculture (USDA) and the *University of Arkansas* say consumers in a test ranked canned bighead carp as better than or equal in taste to canned tuna. That is quite a feat, considering that common carp are scavengers so ill-liked that some anglers won't even throw them back into the water. Bigheads are a different species but still have an image problem," says Donald Freeman, director of the USDA's ARS Aquaculture Systems Research Unit In Pine Bluff, AR.

"If we called this carp on the can, no one would purchase it", he says. So researchers are considering, seeking a name change. One possibility is "noble fish", a play on the formal species name, "*Hypophthalmichthys nobilis*." Another idea is "lake fish". Farmers now grow bighead carp mainly for ethnic markets, but the, bony fresh fish aren't palatable to broader U.S. tastes. So canning, which gets rid of the bone problem, is key to expansion.

"The bighead-carp is like the silver carp and the white amur; they came over here from China and have been used to reduce vegetation and algae in lakes, sewage lagoons and other places," said Allen Carter, Chief of Fisheries for the Arkansas Game and Fish Commission. Carter added, "The bighead carp is not common in Arkansas. These fish are probably escapees from an aquaculture facility, and what's notable is they have grown to those big sizes by feeding on plankton, microscopic plant organisms in the water. That's all a bighead carp will eat, plankton."



"Bighead carp"

Bighead carp are found only in major rivers, and fishermen rarely catch them because they don't take large baits. A distinctive feature of the fish is eyes low on each side of the head instead of high on the head like most other fish (note photo above). The bighead carp's keel or belly plate is short and near the rear instead of extending all the way underneath the fish as with a silver carp.

Meanwhile, bighead carp aren't so popular in states along the lower Missouri River (Missouri, Iowa, Kansas, Nebraska, and South Dakota). These states have raised concern that the species, first documented in the early 1980's, may have significant negative impacts on native plankton feeding fish such as the bigmouth buffalo (*Ictiobus cyprinellus*) and paddlefish (*Polyodon spathula*). The bighead carp and its Asian cousins, the silver carp

(*Hypophthalmichthys molitrix*) and black carp (*Mylopharyngodon piceus*), have all been introduced into this country for aquaculture purposes, and have apparently escaped into the wild, becoming significant aquatic nuisance species, impacting many of our native fish species.

This subject was discussed at length at MICRA's winter meeting, held on 12/8-9/98 in Cincinnati. As a result several of the Missouri River states will be participating in a multi-state study to determine the present distribution of Asian carp, their extent of spread, and their food habits in the wild to assess the magnitude of impact on native fishes. Funding for this work will likely come from the taxes that are levied on the sale of sport fishing equipment. The latter raises the ethical (if not legal) issue of the responsibility of one party (the aquaculture industry) potentially impacting the interests of another (the sport fishing industry). Similar conflicts were raised between the maritime industry, who brought us the zebra mussel, and the boating and recreational fishing industries who are being significantly impacted by the mussel.

Conflicts such as these will likely only escalate as we move into the next millennium. As human populations continue to grow while natural resources continue to decrease, the actions of one are more likely to effect the interests of another. This will also increase the need for interjurisdictional groups like MICRA to maintain an active forum for discussion and debate of aquatic nuisance species issues.

Sources: Arkansas Game & Fish Commission, *Arkansas Outdoors*, 4/8/98; *The LMRCC Newsletter*, Vol. 5, No. 3, 12/98; and *The Wall Street Journal*, 1/7/99.

Natural Enemies of Zebra Mussels

"This paper reviews the international literature on the natural enemies of *Dreissena spp.* and discusses the biology and ecology of organisms known to be involved in their predation (176 species), parasitism (34 species), and competitive exclusion (10 species).

Research on natural enemies, both in Europe and North America, has focused on predators, particularly birds (36 species) and fish (15 and 38 species eating veligers and attached mussels, respectively). Other field-documented predation includes consumption of pelagic larvae by copepods and coelenterates, and consumption of attached mussels by leeches, crabs, crayfish, and rodents. Cannibalism of veligers by adult zebra mussels has also been reported. Ciliates and trematodes are the most commonly reported obligate parasites, with occasional records of suspected bacterial or ascetosporan infection. Mites, nematodes, leeches, chironomids, and oligochaetes have been observed to be associated symbiotically within the mantle cavity, but with few to no adverse effects. Organisms capable of competitively displacing zebra mussels from hard substrates include sponges, amphipods, algae, bryozoans, hydrozoan coelenterates, and other bivalve species (including interspecific competition among *Dreissena* spp.).

"Although the vast majority of the organisms that are natural enemies in Europe are not present in North America, ecologically similar species do exist on this continent, and zebra mussels represent a novel and abundant organism for these native predators, parasites, and ecological competitors -- the new natural enemies of *Dreissena*. However, the idea that these organisms could eliminate zebra mussel populations, even in limited areas of North America, is far more hopeful than realistic. As in Europe, there will likely be isolated reports of major impacts by natural enemies and on the whole we will likely see a cumulative effect of a suite of enemies having a constant, but limited, role in suppressing zebra mussel populations."

Source: *Natural Enemies of Zebra Mussels: Predators, Parasites, and Ecological Competitors*; Daniel P. Molloy, Alexander Y. Karatayev, Lyubov E. Burlakova, Dina P. Kurandina, and Franck Laruelle; *Reviews in Fisheries Science*, 5(1): 27-97 (1997)



"Zebra mussel"
(*Dreissena* spp.) 2-3X

Fish Passage on the Colorado River

Completion of modification to the *Grand Valley Irrigation Company*'s diversion dam on the Colorado River just upstream of Palisade, CO has given native and endangered fish year-round access to an additional three miles of Colorado River habitat. The dam is the oldest major irrigation project in the Grand Valley, having gone into operation in 1883.

The first fish passageway was completed in 1996 at the Redlands Diversion Dam. This ladder has been used by 42 endangered fish and more than 26,000 other native fish. The *Grand Valley Irrigation Company* completed the project ahead of schedule and below budget. The final cost was \$590,000, nearly \$200,000 below preliminary estimates. Funding for the project was provided through the Upper Colorado River Endangered Fish Recovery Program.

Construction required making a notch in the existing dam and arranging large rocks in the downstream river channel in a 475-foot zigzag pattern. The configuration simulates natural pools and riffles and makes it easier for fish to swim through. Completing this passageway is the first step in restoring endangered fish access to approximately 50 miles of additional Colorado River habitat upstream from Palisade to Rifle, CO.

Two upstream structures, the Grand Valley Project Diversion Dam and Price Stubb Dam, also impede fish migration. The Recovery Program currently is evaluating whether to construct passage structures at these other dams.

Source: Jone Wright, Bureau of Reclamation, Upper Colorado River Endangered Fish Recovery Program, Fall/Winter 1998

Fish Passage in Australia

In New South Wales a review of all the weirs in the state is being undertaken. This review is to assess which weirs are providing a positive useful benefit, and whether a fishway may be incorporated into their design. Those weirs that are not providing benefit are being

removed, with subsequent environmental benefits.

The State's fishways group has recently completed two new fishway structures on the Nepean River near Camden. These structures are innovative projects, as they are constructed around the weirs rather than on the weirs. This means that they do not affect the operational integrity of the weirs. The fishways have been constructed using the "keyed in boulder" technique, with the final appearance of the structure looking like a complicated series of natural riffles.

The configuration of the fishway ensures that the fish do not get lost when they reach the weir. No, they do not have signposts! The fish are attracted to the fishway because the entrance is located reasonably close to the weir face, and fish are naturally attracted to the higher velocity areas. Even smaller fish can traverse the fishway without difficulty. The new fishways provide fish passage for at least 90% of the time. (The other 10% are during periods of very high flow and the fish can normally migrate in these times with the weirs in place.)

Another positive impact is on water quality, which is improved because it is aerated by entrainment of air in the riffles. Importantly, the technique works, does not require maintenance, and is cheaper than most other methods.

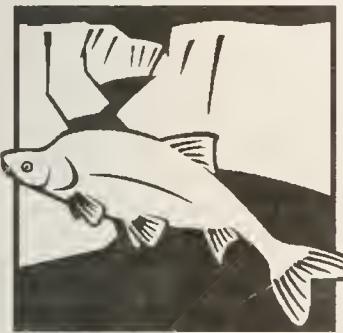
For more information contact: Mr. Peter Wem, Riverine Corridor Program, Department of Land and Water Conservation, P.O. Box 3720, Parramatta, New South Wales 2124; Tel: (02) 9895 7029; Fax: (02) 9895 7845; pwem@dlwc.nsw.gov.au

Source: *Riprap*, Issue #11, 12/98, Land & Water Resources Research & Development Corporation, Canberra, Australia

Riverside Wetlands and Endangered Fish

The U.S. Fish and Wildlife Service and Bureau of Reclamation are working to acquire access to riverside wetlands for endangered fish habitat along the Colorado River for endangered fish

recovery. Priority properties are those immediately adjacent to the river in areas where flooding is most likely to occur. The Upper Colorado River Endangered Fish Recovery Program spent about \$75,000 for this purpose in FY 98 and has set aside about \$1.7 million for FY 99.



UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

Key points of this initiative are:

- The project is strictly voluntary. Landowners are under no obligation to participate but would be compensated at fair market value for property rights if they choose to sell.
- The preferred agreements involve using easements, not actually buying the land. This allows original landowners to maintain their property title. Other activities such as grazing, farming, fishing and hunting are allowed on the property as long as these actions did not harm endangered fish.
- Landowners are not required to provide public access to their land.
- The project helps achieve progress toward recovery of endangered fish, which in turn allows the states of Colorado, Utah and Wyoming to develop more water for human purposes while complying with the Endangered Species Act.
- The project involves easements for up to 5,750 acres along the Green River; 3,500 acres along the Colorado River; and 750 acres along the Gunnison River.
- Wetlands are believed essential to recovery of endangered fish such as the razorback sucker and Colorado squawfish. These areas provide warmer, slower-moving water and an abundance of microscopic food. Young endangered fish grow significantly faster in these areas, which may then enable them to become large

enough to fend for themselves in the main river channel and escape predation by other adult fish.

- Wetlands also help control flooding, filter water pollutants, replenish ground-water supplies and provide habitat for hundreds of species of plants and wildlife. In fact, wetlands produce more plant and animal material than any other habitat type on earth, including Brazilian rain forests.

- Riparian, or riverside, areas have been called "streams of life" and the "lifeblood" of the arid West. Scientists estimate that 60 to 90% of all terrestrial wildlife species require wetlands for their survival.

- Wildlife that commonly use wetlands along the Colorado River basin include deer, elk, rabbits, raccoons, squirrels, muskrats, beavers, mink, foxes, coyotes, fish, frogs, turtles, snakes, ducks, geese, songbirds, shorebirds, quail, pheasants, owls, hawks and eagles.

- Biologists believe boosting riverside wetlands may help keep other native fish, birds, plants and mammals from becoming endangered.

- Restoring wetland habitats also can help replenish native willows and cottonwood trees, which can provide roosting areas for eagles, herons and many other birds.

- Historically, upper Colorado River basin floodplains frequently were inundated during spring runoff. Today in the upper Colorado River basin, stream-side wetlands have been drained or cut off from the river by dikes, and many of the rivers' "backwaters" have disappeared. Habitat loss is one of the key reasons for the decline of many fish and wildlife species.

The Upper Colorado River Endangered Fish Recovery Program has established a site on the World Wide Web with more than 60 color photos of the Colorado River basin, endangered Colorado River fish, hatchery facilities, researchers at work and historical photos of the fish from the early 1900s. The site also explains why the fish are endangered, describes the Upper Colorado River Recovery Program, and tells what's being done to recover them. The site is located at: www.r6.fws.gov/colorado_river

Source: Upper Colorado River Endangered Fish Recovery Program, Fall/Winter 1998

Mountain Top Removal

A "landmark court settlement" between environmentalists and federal regulators will require new studies on the environmental impacts of mountaintop-removal mining operations. The agreement between the *West Virginia Highlands Conservancy* and federal agencies, including the US EPA, U.S. Office of Surface Mining (OSM) and U.S. Fish and Wildlife Service, settles a federal lawsuit brought by the group over mountaintop removal practices in 7/98.

The agreement requires the agencies to study the environmental impacts of mountaintop removal to determine the rules needed to limit environmental damage. Until the study is complete, smaller-scale environmental studies will be required for each new mine permit that proposes filling in streams with drainage areas of 250 acres or more. The agreement exempts *Arch Coal Inc.*'s proposed Dal-Tex mining complex expansion permit near Blair, WV. The EPA said the company has proposed to reduce the mine's stream fills from 12 acres to 7.4 acres. However, the *WV Highlands Conservancy* refused to sign off on the granting of the Dal-Tex permit, maintaining their right to challenge it in court. The group also refused to drop separate allegations in their lawsuit against the West Virginia Division of Environmental Protection.

A December report by the OSM condemned several mountaintop removal strip mines as illegal and "blamed vague laws for speeding the growth of the practice." The report, culminating ten months of study by the OSM, found that coal operators are "indiscriminately dumping" mine fills into valleys to avoid the expense of rebuilding hilltops; that mountaintop mines in West Virginia have received mining permits from state environmental officials without meeting federal environmental requirements; and that vague legal definitions have prevented the enforcement of laws requiring that mountains be restored by coal operators to resemble their appearance before mining. The report also recommends that the West Virginia Division of Environmental Protection adopt stricter laws to mirror federal standards for the practice and that the DEP review "hundreds of permits"

granted to rectify various "illegal provisions". Copies of the report can be downloaded from the OSM Web page.

Meanwhile, a bipartisan group of West Virginia state lawmakers has recommended a package of eight bills addressing the environmental effects of mountaintop removal mining, including one that would repeal a law passed last year allowing coal companies to fill larger areas with mine waste. The lawmakers also recommended increasing buffer zones between active mines and residents from 300 to 1,000 feet and other measures to reduce blasting damage.

The *West Virginia Native American Coalition* has published an anti-mountaintop removal pamphlet called "*The Hills Are Exploding*," and it is organizing protests against the practice. *Lexington (KY) Herald-Leader* columnist Bill Bishop writes that "changes in mine safety laws and environmental regulations" will come "when we make a political statement that we're not willing to flatten or impoverish Appalachia just so it's cheaper to run a toaster or an espresso machine" (12/9).

Sources: Ken Ward, *Charleston (WV) Gazette*, 12/17 and 12/31/98; and 1/3/99; AP/*Lexington (KY) Herald-Leader*, 12/7/98; Greg Stone, *Charleston (WV) Gazette*, 12/8/98 and National Journal's GREENWIRE, *The Environmental News Daily*, 12/8, 12/11, 12/17, 1/5, and 1/21/99

Gulf of Mexico Hypoxia Problem

Deepening concern about the hypoxic (low oxygen) conditions that plague the Gulf of Mexico and threaten the livelihood of regional fishermen sparked the formation of the *Mississippi River/Gulf of Mexico Watershed Nutrient Task Force* in 12/97. The Task Force is charged with developing solutions to the nutrient over enrichment that depletes oxygen in portions of the northern Gulf of Mexico.

At the Task Force's most recent meeting in September, preliminary assessments were unveiled by members working on scientific assessment of the problem. The goals are to 1) document the state of knowledge of the

extent, characteristics, causes and effects (both ecological and economic) of hypoxia in the Gulf, and 2) compile existing information on the nutrient sources, identify alternatives to reducing nutrient loads, and examine the costs and benefits of reducing nutrient loads.

The Task Force is developing six inter-related reports on various aspects of these issues:

- Characterization of the distribution, dynamics and causes of hypoxia in the Gulf, including the relationship of hypoxia to nutrient loadings, and the relative contributions of human and natural factors;
- Ecological and economic consequences of nutrient loading, including the impacts on the Gulf fisheries and the regional and national economy;
- Sources and loads of nutrients transported to the Gulf from within the Mississippi/Atchafalaya River system, including identification of the most significant nutrient loads to the basin's surface water and estimation of the relative impact of human versus natural sources of nutrients;
- Effects of reducing nutrient loads on water quality, primary production, and hypoxia within the basin and Gulf. Modeling will estimate the magnitude of load reductions necessary to significantly affect hypoxic conditions;
- Evaluation of methods to reduce nutrient loads to surface water, ground water, and the Gulf. Analysis will include reduction of source contributions as well as the effects of alterations to the system, such as hydraulic transport modifications; and
- Evaluation of social and economic costs and benefits of nutrient reduction methods.

At the September meeting, Don Goolsby of the USGS provided an overview of the sources and loadings of nitrogen and phosphorus to the Mississippi River basin and outlined human activities that contribute to the loadings. An upward trend of nitrogen, primarily in the form of nitrate, in the 1970s was followed by a steady level from 1983 to 1996. From 1980 to 1996, the average load of total nitrogen to the basin was 1,567,900 metric tons per year. According to Goolsby, highly variable yields of nitrogen from year to year suggest the presence of soils with a large storage capacity. Sources of loadings include fertilizer applications,

air deposition, manure, and legumes. Goolsby estimated that 17% of the total loadings are from municipal and industrial point sources, and Iowa and Illinois lead the basin states in total estimated nitrogen load contributions.

Bill Mitsch, Ohio State University, discussed potential approaches for reducing nutrient loads to the basin. Suggested approaches include modifying agricultural practices, improving point source control technologies, restoring landscapes (including wetlands and riparian corridors) in rural areas, implementing urban nonpoint source controls, restoring the Mississippi River Delta and other streams and rivers in the basin, and implementing and improving atmospheric pollution controls. Modeling scenarios predict that approximately 10 million acres of wetlands and riparian areas would have to be restored or created in the basin in order to decrease nitrogen loads significantly. The science team will most likely recommend a combination of control efforts.

Otto Doering of Purdue University reported on progress in evaluating the social and economic costs and benefits of methods for reducing nutrient loads. About 80% of total U.S. acres in major crop production of wheat, corn, soybeans, and hay are in the Mississippi River basin, making agricultural nitrogen an important target for reduction strategies. Several economic scenarios focus on reducing nitrogen from nonpoint sources, particularly cropland. One scenario included point source-nonpoint source trading where point sources would support efforts by agricultural producers to reduce nitrogen loads.

Another modeling scenario included the economic and environmental effects of reducing nitrogen use. Still another predicted the effect of moving high-nitrogen-use crops to land areas that do not drain to the Mississippi River Basin. The models indicate that a 60% reduction of nitrogen input to the Gulf would create significant economic disruptions to the agricultural sector in the Mississippi River Basin. A 20% reduction, considered more realistic, would avoid causing a significant economic impact. The science teams will submit their final reports next year.

The Task Force also drafted a "win-win" strategy for identifying near-term actions needed to reduce nutrient loads. The strategy, which would modify existing programs to reduce impacts to the hypoxic zone, is based on the premise that improving water quality "up-river" will benefit the Gulf of Mexico as well as landowners and the environment throughout the Basin. Most strategy actions focus on nutrient management and habitat restoration and build on existing programs and the Clean Water Action Plan.

Meanwhile a team of Illinois scientists blames the hypoxia zone, in part, on channelization of the lower Mississippi River and the resultant isolation of the River from its historic coastal wetlands. They say the channelized ship canal carries the River's nutrient laden waters directly out to the continental shelf, bypassing the nutrient stabilization capability of the River's natural coastal wetlands, injecting them right into Gulf's deep coastal waters. The analogy likens the ship canal to a hypodermic needle, and the Gulf to a person involuntarily being injected with drugs. This hypothesis makes sense to many, and it's obvious that the Midwestern states and the agricultural industry are not going to play dead and accept full responsibility for the hypoxia problem. Like Pogo, "We have identified the enemy - it is all of us!" And given that, all contributing parties will have to cooperate to solve this problem.

Meanwhile, P.L. 105-383, the Coast Guard Authorization Act of 1998 and 1999, enacted on 11/13/98, includes Title VI the "Harmful Algal Bloom and Hypoxia Research and Control Act of 1998". It provides for assessments of ecological and economic consequences of harmful algal blooms and hypoxia; and requires a plan for controlling hypoxia in the northern Gulf of Mexico by 3/30/00.

The next meeting of the Nutrient Task Force is planned for 2/11/99, in Memphis, TN.

For more information contact: Mary Belefski, U. S. EPA, 4503F, 401 M St. SW, Washington, DC 20460; (202) 260-7061; belefski.mary@epa.gov; www.epa.gov/surf/surf98/Mississippi/msrhp.html

Source: *NonPoint Source News Notes*, Issue #55, December 1998

Ag Waste Update

The US EPA and U.S. pork producers on 11/25 reached an agreement that will allow hog farmers to devise a voluntary program "to curb water pollution". Under the deal, hog farmers who have their farms inspected under the *National Pork Producers Council's* (NPPC) EPA-approved odor and water quality assessment program will be eligible for reduced penalties for any Clean Water Act violations discovered and then corrected. Fines of up to \$27,000 a day will now be capped at \$40,000 per farmer

Meanwhile, a report released by the *Clean Water Network* (CWN) and *Natural Resources Defense Council* (NRDC) in December said that federal and state environmental regulations are failing to keep pace with pollution stemming from the "rapid growth of factory farms." The report documents environmental "disasters" in 30 states "spawned" by "animal factories." The increase in factory farming, inadequate pollution control technology, and lax regulation have resulted in "serious pollution problems around the country," according to the groups. US EPA data shows that groundwater in 17 states is impaired by feedlot manure, and the U.S. Fish and Wildlife Service estimates 60,000 miles of streams in the U.S. are contaminated by manure runoff. The groups criticize the EPA's enforcement citing, a 1992 General Accounting Office report that said only 30% of 6,600 farms large enough to require a federal permit actually obtained one. None of the state programs that were evaluated "have been effective in curbing" pollution, the groups say. In fact, many states continue to take "aggressive" steps to attract factory farms through government benefits, and several states don't have a permitting system in place. The groups recommend establishing a moratorium on Clean Water Act permits for new or expanding factory farms until all existing facilities have obtained permits and standards are upgraded. They also call for banning massive open-air manure lagoons, spraying of manure and urine onto crops, and regulating the poultry industry like other animal operations.

Andy Baumert of the NPPC disputed the report's conclusions and said that in the last two years, "all" the states with the most hog farming "have seen new legislation or regulation". But the environmentalists panned the agreement between EPA and NPPC allowing farms to be inspected under an EPA-approved, industry-run program. Robbin Marks of the NRDC said, "With this agreement, EPA is admitting ... that violations of the Clean Water Act by animal factories are rampant. The question is why doesn't EPA beef up their enforcement?"

The *American Farm Bureau Foundation for Agriculture* (AFBF) in early December said it would help finance a number of research projects assessing agricultural waste and runoff issues. *Mississippi State University* researchers will examine modifying swine diets to reduce pollution, while USDA scientists will study cutting nitrate pollution by using organic matter in drain water. At the *University of California-Davis*, researchers will study stream temperature and sediment loading monitoring.

Also in December, National poultry industry representatives approved a sweeping, voluntary plan to limit runoff from chicken farms, but their enthusiasm for it was countered by doubt from the US EPA and environmentalists that the move would have any impact. The fear is that small farmers rather than big chicken companies will be expected to bear the costs, and without government subsidies that won't happen.

Meanwhile, The *Ag-Earth Task Force*, a nationwide group of agricultural companies and associations, on 11/30 announced a redesigned website to launch its drive to increase public awareness about conservation and environmental stewardship in U.S. agriculture. The effort will culminate with 1999 Earth Day activities on the National Mall. The website can be accessed at www.nasda-hq.org.

Iowa: EPA and Agriculture Dept. officials met with the *Animal Agriculture Consulting Organization* and Iowa environmental representatives on 12/3, the same day that the *Clean Water Network* and the *Natural Resources Defense Council* released their report. Darrell McAllister, Iowa's top water-quality official, told the EPA that

Iowa wouldn't have the funds to implement future federal regulations because it can't afford to implement existing state laws. Meanwhile, Sen. Tom Harkin (D/IA) said at a 12/4 public hearing that he wants to ensure that the pork industry continues to thrive in the state, but Iowa must improve water and air quality.

Maryland: Delegates to the December *Maryland Farm Bureau* convention rejected a controversial proposal to stop the application of nutrient-laden sewage sludge on their fields. Some opponents said removing the option of sludge application would force them to apply more commercial fertilizer containing chemicals. Members then voted to approve the formation of a political action committee, breaking the group's "83-year history of political neutrality". Farmer Daniel Shortall said producers need a stronger voice in dealing with the legislature because few politicians have agricultural backgrounds. The PAC's goal is to raise \$50,000 a year to support farm-friendly legislators. He noted that farmers "came out on the short end" of the *Pfiesteria piscicida* debate, saying there is no proof that nutrient runoff from farms is linked to the outbreak of the toxic microbe.

Missouri: Missouri State Attorney General Jay Nixon (D) on 1/19 sued the Kansas-based *Premium Standard Farms* for not reporting 11 manure spills in 1996 and 1997 until 12/98. Nixon is asking the Jackson County Circuit Court to order the nation's third-largest pork producer to stop all breeding operations until the company implements a court-approved waste management plan.

Montana: Environmentalists argued on 12/3 that Montana's program for regulating water pollution from factory farms is "weak" and could encourage a proliferation of these farms in the state. Although state regulations require permits for the farms, the *Northern Plains Resource Council* and *MontanaPeer* said the Dept. of Environmental Quality issues them only when an operator voluntarily seeks one or when someone complains about an operation.

Nebraska: The Nebraska Game and Parks Commission is concerned that runoff from a proposed 84,000-hog confinement facility near Long Pine Creek in north-central Nebraska could threaten the state's longest self-sustaining trout stream and diminish wildlife along the creek. In addition, streams along the creek sustain a bottled-water plant and provide drinking water to neighboring towns.

North Carolina: The *North Carolina Environmental Defense Fund* has launched an unusual new Web site as part of its Hog Watch campaign to clean up factory hog farms in the state. The site includes data on each of the state's more than 2,500 hog farms, information about the public health effects of the industry, and a "poop counter" tracking the amount of hog waste being disposed of in North Carolina "every second of every day". Meanwhile, the U.S.'s largest hog-processing plant increased daily production at its Bladen County, NC, plant to 28,000 hogs -- 4,000 more than North Carolina officials say is allowed. But *Smithfield Foods* officials say their hog waste discharge permit sets no daily limit on the number of hogs it can slaughter. Meanwhile, according to state Division of Soil and Water Conservation (DSWC) officials, hundreds of abandoned animal-waste lagoons in North Carolina pose an environmental threat and may require an expensive cleanup. DSWC Director Dewey Botts said fewer than 80 abandoned lagoons have been cleaned up out of 766 identified by inspectors. The North Carolina General Assembly is expected this year to enact new cleanup standards, and the DSWC will ask for an additional \$10 million to help pay the cleanup costs. And at a time when most hog farmers are being cast as "environmental villains," Cabarrus County, NC, hog farmer Tommy Porter is being hailed as an "ecological hero." The *North Carolina Assn. of Soil and Water Conservation Districts* named

Porter and his family the state "Conservation Farm Family of the Year" for not having a single complaint filed against their 2,000-sow farm in the past five years.

Oklahoma: The Texas-based *Consoritum Service Management Group* wants to build the first-of-its-kind U.S. treatment plant in Oklahoma that can convert hog waste into organic fertilizer and methane. The technology eliminates the need for waste lagoons as the manure is pumped through pipes to the plant where it is processed. The methane could be used to generate electricity and heat the plant, and water is recycled for reuse on the farm

Texas: The US EPA and the Dept. of Agriculture last fall announced a clean water plan meant to guide states in developing their own regulations for concentrated animal farms. But the Texas Natural Resource Conservation Commission early this year released draft feedlot operation rules that "didn't even mention" runoff pollution. State officials and farm groups aren't "enthusiastic" about the federal guidelines because they fear they would discourage the use of manure as fertilizer. The 140 feedlots in Texas produce 6-9 million tons of manure each year, almost all of which is given to farmers for use as fertilizer. But scientists in the EPA Region VI office have proposed that farmers limit the use of manure fertilizer if their soil has more than 130 pounds an acre of phosphorous.

Utah: Iron County, UT, planners are expected to approve the expansion of *Circle Four Farms* hog production over the next 3-5 years from 600,000 to 900,000 annually. The expansion would add 35,000 sows to the company's Blue Mountain complex near Milford, the largest in the U.S.

Virginia: The Virginia House of Delegates in late January unanimously passed a bill that would create a permit program for poultry waste similar to programs for hog, beef and dairy operations. The measure, which would require management plans to prevent runoff from polluting water-



ways, is expected to be signed by Gov. James Gilmore (R). The state Senate unanimously approved the measure. The Virginia Dept. of Conservation and Recreation reported that from 1988 to 1998, the voluntary "best management practices" followed by a growing number of farmers reduced by several million pounds the nutrients and soil flowing into waterways. The department said that nitrogen losses were cut by 12.6 million pounds, phosphorous was reduced by 2.3 million pounds and soil erosion losses were cut by 2.2 million. Meanwhile in Halifax County, the Board of Supervisors on 12/7 voted to bar new hog farms for an indefinite period of time.

Sources: *Wall Street Journal*, 11/27/98; *AP/Washington Post/others*, 11/26/98; *CWN/NRDC* report, 12/98; *AP/Boston Globe*, 12/4/98; *CWN* release, 11/30/98; *AFBF* release, 12/8/98; Peter Goodman, *Washington Post*, 12/10/98; Perry Beeman, *Des Moines Register*, 12/4/98; Chris Clayton, *Omaha World-Herald*, 12/5/98; Jim Gransbery, *Billings Gazette*, 12/4/98; Ted Shelsby, *Baltimore Sun*, 12/10/98; Ted Shelsby, *Baltimore Sun*, 12/8 and 12/9/98; Bill Bell, *St. Louis Post-Dispatch*, 1/20/99; Paul Hammel, *Omaha World-Herald*, 1/4/99; *NCEDF* release, 12/9/98; *USA Today*, 12/9/98; *AP/Charlotte Observer*, 1/5/99; Kerry Prichard, *Charlotte Observer*, 1/6/99; Danny Boyd, *Oklahoma City Daily Oklahoma*, 1/3/99; Patrick Barta, *Wall Street Journal*, (Texas edition) online 1/20/99; Lesley Mitchell, *Salt Lake Tribune*, 12/2/98, AEP release, 11/30/98; *Richmond Times-Dispatch*, 1/20/99; Greg Edwards, *Richmond Times-Dispatch*, 12/9/99; Jamie Ruff, *Richmond Times-Dispatch*, 12/9/98; National Journal's *GREENWIRE*, *The Environmental News Daily*, 11/30, 12/4, 12/8, 12/9, 12/10 1/6, and 1/21/99

Sediment Storage Capacity of Grass Buffer Strips

The performance of grass buffer strips alongside streams in trapping and storing sediment and nutrients, is generally considered in relation to sediment transport capacity. Grass strips have a low sediment transport

capacity because of the hydraulic roughness of the grass stems, but as deposition takes place and the grass is progressively buried, hydraulic roughness decreases and sediment transport capacity increases until no more sediment is deposited.

As an alternative to the sediment transport approach, a recent study used the storage capacity of buffer strips as a measure of their effectiveness. Backwater storage, just upslope of the grass buffer strip, is important in this respect, especially at lower slopes. A backwater is an area of deep, slow-flowing water, that occurs behind a grass buffer strip. Sediment is deposited because the slow-flowing water is unable to carry its load, the same process that causes deposition within the grass. The effectiveness of grass buffers can, therefore, be measured in terms of the total amount of sediment that can be stored in the backwater and the buffer itself.

A recent study has shown that with shallow, evenly distributed overland flow, relatively narrow grass buffer strips can have a considerable storage potential, especially on slopes less than 18%. This is because the grass effectively acts as a permeable weir. The water backing up behind the grass provides a deposition area, as does the grass itself. Backwater storage tends to result in upslope extension of buffer strips, after grass has grown over the sediment deposit. Importantly, sediment trapping can be repeated because grass seeds in deposits germinate and grass grows through earlier deposits. On a 6% slope, the backwater can trap 41 kilograms/meter length of grass buffer, while on a 27% slope only 5 kilograms can be trapped in this way.

Under ideal conditions of weak flow convergence, backwater and narrow dense grass buffers can provide efficient sediment control. These findings highlight the importance of understanding the dynamics of sediment trapping in grass buffer strips as they provide a simple, effective and environmentally friendly measure to trap sediment and prevent stream pollution, even on steep slopes.

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Source: *Riprap*, Issue 11, December 1998, Land and Water Resources Research and Development Corporation, Canberra, Australia

Wooded Buffer Strips Provide Profit and Protection

Oregon farmer Rob Miller planted his first buffer strip of native cottonwood 25 years ago along the riverbanks adjacent to his cropland. Since then, "working" buffer strips have not only protected his valuable farmland from erosion, but have also provided a profitable wood crop. They are now an integral part of a diversified farming operation that includes row crops, a research and production nursery, and specialty crops.

Mt. Jefferson Farms, owned by second-generation farmer Rob Miller, produces a variety of row crops on about 200 acres of fertile alluvial soil along the North Santiam River in the Willamette Valley south of Salem. According to Miller, the farm originally had 600 acres of irrigated cropland along the river, but lost 400 acres to erosion and siltation from periodic flooding. The remaining acreage has been saved by the planting of riparian buffer strips.

In the mid-1960s, Miller procured cuttings of 100 hybrid clones for testing on the family farm. He planted the first buffer strips of native black cottonwood (*Populus trichocarpa*) and hybrid poplars in 1970. The original plantings have withstood several major floods, and portions of it have since been harvested several times for high-value wood products. "My aim is to show landowners that buffer strips can be profitable," Miller says, "or at least a break-even proposition."

The original planting of native black cottonwood was commercially thinned in 1980 and 1994. The 1994 harvest yielded 10,000 board feet per acre, almost all of which was sold for veneer peeler logs at a value of \$350 per thousand board feet. The harvest produced a total gross return of \$70,000. Miller says that other sites on his farm planted with black cottonwood in the mid-1970's have yielded

20,000-25,000 board feet per acre of veneer grade logs.

Miller has also planted poplars and cottonwoods in upland areas of his farm where the soils are too poor to grow economic yields of row crops or grass seed. In a 10-year-old test planting that includes native black cottonwood and several clones of hybrid poplar, the native cottonwood has grown about half as fast as the hybrid poplar. However, where Miller has planted native cottonwoods on better soils adjacent to the riverbank, they have attained merchantable size for veneer in as little as 12-15 years.

Miller sees the use of riparian buffer strips to protect water quality as a proactive step to meet expected future regulation which may mandate controls on farming operations near riparian areas. He has about 200 acres of multipurpose riparian buffer at *Mt. Jefferson Farms*, managing it as a profitable wood crop, protecting his farmland from erosion and flooding, and preventing excess nutrients and agricultural chemicals from reaching the river. The plantings range from 200 to 1,000 feet wide along two miles of river frontage. Miller's aim is to harvest and replant portions of the buffer strips every year to achieve an annual sustained yield of timber while maintaining their protective capacity.

In addition to the riparian buffer strips of cottonwood and poplar, Miller has effectively used several bioengineering practices to prevent streambank erosion. Both poplars and willows are densely planted as "live stakes," and cuttings are used to construct fascines and brush mattresses to help protect the river banks. Buffer strips, combined with bioengineering measures, reduced erosion and siltation of Miller's farmland during recent floods while large barriers of rock rip-rap installed to protect the neighboring farm on the opposite side of the river were not successful.

Miller uses a zonal design to establish riparian buffer strips at *Mt. Jefferson Farms*. In the zone closest to the river, native cottonwood and native understory plants are established. In some areas with suitable soils, hybrid poplars are densely planted (one per square foot) near the riverbank, both to control erosion and as a stool bed

for cuttings. In the next zone away from the river, a variety of trees are more widely spaced for timber production. In addition to hybrid poplar, Miller is also planting Knobcone-Monterey hybrid pine and leyland cypress for wood production on a sustainable cycle of harvest and coppicing or replanting.

Mt. Jefferson Farms is Oregon's first and largest hybrid poplar nursery. The company has growing grounds and greenhouse facilities near Salem. Every year, the nursery produces millions of dormant cuttings for landscaping, farmland plantings, and industrial fiber plantations. The nursery also does selection, breeding and genetic improvement of hybrid poplars for private industry and public agencies. Many new poplar clones, obtained from *Washington State University, University of Washington* and other sources, have been screened in greenhouse and field trials. Clones are tested not only for growth, but also for their capacity to take up nutrients such as nitrogen and phosphorus. Clones that are highly efficient at absorbing excess nutrients will be used for "phytoremediation" treatment of wastewater.

In 1992, Miller began selecting and custom-propagating a variety of other native tree and shrub species for ornamental and environmental purposes, e.g., wastewater treatment, filter strips, bioengineering, and watershed revegetation. Customers for contract propagation include both public agencies (e.g., USFS, BLM) and private companies. The aim is to propagate plant material for replanting in the same watershed or zone where it originated. Miller says that the practice of using locally-collected native plants, rather than introducing off-site genetic material, improves the survival rate for revegetation projects. The nursery has propagated spirea, alder, cottonwood, rose, berries, conifers, willow, cypress, and grasses.

For more information contact: Rob Miller, *Mt. Jefferson Farms*, P.O. Box 12708, Salem, OR 97309.

Source: *Temperate Agroforestry*, 203 ABNR, University of Missouri, Columbia, MO 65211. Website: www.missouri.edu/~afta/afta_home.html.

Buffer Strips

Misunderstood by the Public

Focus groups organized by the Maine Department of Environmental Protection's Nonpoint Source Program in 1998 examined marketing non-point source controls to the general public. Several findings concerned buffer strips. They found that the term "buffer" carries a different meaning for the public than the one intended by water quality agencies. One member of the focus group said that "a buffer was a product used to wax a car."

In addition, the public is more interested in advantages like privacy, noise reduction, and attracting birds and wildlife. They are less interested in "intangibles" like protecting water quality. The groups recommended avoiding "technoese," by telling people, for example, "plant trees and shrubs, instead of "plant a buffer." They also advocated picking selling points with the public concerns in mind, rather than that of the agency.

Asking people to plant a buffer for water quality does not appeal to individual needs and societal values. Future campaigns should include slogans like "plant trees and shrubs, screen out noise, increase privacy, attract wildlife, and protect water quality," the groups recommended.

Source: *NonPoint Source News Notes*, November, 1998, Issue #54

Miscellaneous River Issues

Acid Mine Drainage: The U.S. Office of Surface Mining (OSM) on 1/4 announced a new initiative, the Watershed Cooperative Agreement Program, to provide funding for local organizations to undertake acid mine drainage projects. More than \$700,000 will be made available to fund cooperative agreements between the OSM and non-profit groups under the office's FY 99 Appalachian Clean Streams Initiative. Sources: *OSM release*, 1/4/99; and *National Journal's GREENWIRE, The Environmental News Daily*, 1/5/99

Arkansas River Shiner Listed: The U.S. Fish and Wildlife Service (USFWS) in late November listed the Arkansas River shiner as threatened under the Endangered Species Act and

said the small silver minnow is likely to become endangered in the foreseeable future. To protect the fish, the USFWS will encourage Texas, Oklahoma and New Mexico to improve irrigation efficiency and water conservation. Some Army Corps of Engineers reservoirs also may need to be modified. A recovery plan for the species will be drafted over the next two years. Sources: *AP/Dallas Morning News*, 11/26/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 12/1/98

Chicago River Snow Dumping: Chicago officials have opted not to dump excess snow into the Chicago River or Lake Michigan as has been done in past winters, due to fears that contamination from city streets will "foul" waters that the city has worked for 10 years to clean up. The US EPA does not prohibit dumping snow in a river, and many cities do it. But Chicago officials want to avoid past "mistakes" like the incident in 1979 when a junk car was tossed into the lake with the snow. Sources: Debbie Howlett, *USA Today*, 1/15/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 1/15/99

DNA Testing for Pollution: A new method of DNA testing that determines genetic diversity of fish populations can reflect the amount of pollution in waterways. The method developed by *Wright State University* molecular biologist Dan Krane, is similar to one that Virginia officials are using to find water pollution sources. Krane has performed tests on crayfish in Ohio rivers, where he noticed a difference in the amount of genetic diversity in different streams. A high number of closely-related species suggests high pollution levels because less-closely related animals cannot endure the conditions, said Krane. The US EPA's Region V office has been using similar testing for several years, but the testing has not been adopted agency-wide. Krane believes similar methods could be used to detect pollution on land. Sources: James Hannah, *Cleveland Plain Dealer*, 1/10/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 1/13/99

Fox River Cleanup: A judge on 12/4 lifted a restraining order that had prevented the state from hauling

PCB-contaminated silt from the Fox River to a Winnebago County landfill. The county will now accept dried-out silt with PCB concentrations below 50 ppm, while silt with the highest concentration of PCBs will be shipped to a dump near Detroit, MI. Sources: *AP/Milwaukee Journal-Sentinel*, 11/7/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 12/9/98

HCPs/Captive Breeding Criticized: A new report on federal habitat conservation plans (HCPs) for endangered species raises questions about the way the plans are created. More than 100 scientists from eight universities examined 208 HCPs nationwide in a study, sponsored by the *American Institute of Biological Sciences* (AIBS) and the *National Center for Ecological Analysis and Synthesis* (NCEAS). They conclude that the HCPs lacked "adequate" species impact assessments and that mitigation measures lacked supportive data. They said provisions to monitor the success of HCPs were often nonexistent. "In many cases, we found that crucial, yet basic information on species is unavailable for the preparers of HCPs." The *American Lands Alliance* (ALA) and the *Defenders of Wildlife* said the new study bolsters their view that "policy deficiencies" allow "significant habitat degradation." The captive breeding and reintroduction of rare species is also coming under fire "as a costly, often futile exercise" that fails to address key problems like habitat loss. Despite some success stories, critics say the reintroduction programs are "wasteful of individual species," many of which die in the wild. They also say policymakers lack the space and resources to sustain the reintroduced species indefinitely. In a 1994 study of 145 documented reintroduction efforts worldwide, only 16 were found to have produced viable, self-sustaining populations in the wild. The AIBS/NCEAS sponsored report is available online at <http://www.nceas.ucsb.edu>. Sources: *ALA release*, 1/16/99; Mark Derr, *New York Times*, 1/19/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 1/19/99

Logging Road Lawsuit: The U.S. Forest Service (USFS) has agreed to pay \$440,000 for "old and continuing damages" from a logging road to the ranch of a Montana family. The family sued the agency after two major landslides

dumped sediment into a creek on their land. According to the court settlement, the USFS has until the end of 2005 to bring the road into compliance with the National Environmental Policy Act. Sources: *AP/Billings Gazette*, 1/7/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 1/7/99

Little Tallahatchie River Restoration: The Army Corps of Engineers is considering an environmental restoration project on a 23-mile stretch of the Little Tallahatchie's old river bed that the Corps admits is "environmentally degraded" because of its work. The rechannelization would allow for repopulating more than 80 species of fish and restoring wildlife habitat as well as cleaning up much of the water that flows into Sardis Lake. Sources: *AP/Biloxi Sun Herald*, 12/3/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 12/8/98

Mississippi River National Park: Authors and historians Stephen Ambrose and Douglas Brinkley propose the establishment of a Mississippi River National Park to "teach individual and corporate citizens how to appreciate, respect and cherish our national river." The two write that the river in recent decades "has been used as a giant sewer" of PCBs, pesticides, oils, heavy metals and dioxin, but the establishment of the park "would foster public appreciation of the great waterway." "Once people are brought to understand the broad historical and ecological significance of the river, they cannot help but appreciate it and, one hopes, choose to protect it", they said. Sources: *Wall Street Journal*, 1/14/99 and National Journal's GREENWIRE, *The Environmental News Daily*, 1/14/99

Montana Water Regs: The US EPA on 12/24/98 ordered Montana to revise state water regulations within 90 days and condemned "the weakening" of the program. The EPA examined the state's water laws in response to a lawsuit that several environmental groups brought against the EPA in 7/98 for allegedly failing to review changes made to Montana's water-quality standards in 1993 and 1995. In a letter to Gov. Marc Racicot (R), the EPA said it "disapproves" of changes to state law that allow short-term exemptions from

water-quality standards, exclude certain activities from non-degradation requirements and define water degradation in a way that may not provide sufficient protection for waters around national parks and wilderness areas. Montana Environmental Quality Director Mark Simonich said that the EPA is in some cases "dead wrong" in its recommendations for changes, but the state has found some areas that can be "fixed fairly easily". Sources: Erin Billings, *Billings Gazette*, 1/7/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 1/7/99

Nebraska Water Rights: Gov.-elect Mike Johanns (R) on 12/1/98 pledged to take a strong role in setting state water policy and "aggressively defend" the state's water rights in disputes with other states. At the joint annual meeting of the *Nebraska State Irrigation Assn.* and the *Nebraska Water Resources Assn.*, Johanns said that defending water rights "has to be a priority for the state". Meanwhile, the U.S. Supreme Court on 1/19/99 invoked "original jurisdiction" and agreed to resolve a dispute between Kansas and Nebraska over the use of water from the Republican River. Nebraska, Colorado and Kansas in 1943 signed a pact allocating the river's water, but in a suit filed last year, Kansas claimed that Nebraska has been "siphoning off" more water than it is entitled to. Sources: Julie Anderson, *Omaha World-Herald*, 12/2/98; *AP/Wichita Eagle*, 1/20/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 12/3 and 1/21/98

Ohio Farmland Preservation: Acting Ohio Gov. Nancy Hollister (R) on 1/4/99 signed legislation allowing counties to pay farmers for not selling their land to developers, handing planners a tool to stem urban sprawl. The measure allows local governments to pay farmers the difference between the development value and the agricultural value of their farmland. The property would continue to be used for agriculture. Local officials would have to ask voters to raise the sales tax or pass a bond issue to pay farmers, which could be a "tough sell." But Larry Long, head of the *County Commissioners Assn. of Ohio*, said "there's an amazing amount of interest in the issue of farmland preservation". Sources: Paul Souhrada, *AP/Cleveland Plain Dealer*, 1/5/99; and National

Journal's GREENWIRE, *The Environmental News Daily*, 1/6/99

Pennsylvania Protected Fish: A Pennsylvania Fish and Boat Commission proposal to increase the number of fish species listed in the state as endangered or threatened has been delayed by objections from the river dredging, paving, coal and home-building industries. Industry lobbyists are concerned that new habitat protections would stop or limit development and increase state permit costs. But a state Dept. of Environmental Protection analysis finished in November found that the proposed listings would have "scant impact" on the approval or cost of new permits. The commission's proposal is based on a *Penn. State University* study and on a new standardized method of ranking the status of fish species. Under the new method, 56 species are eligible for endangered, threatened or "candidate" listing. A vote on the new listings has been delayed three times by industry requests for extensions of the public comment period, and is now expected no earlier than 5/99. Source: Paul Nussbaum, *Philadelphia Inquirer*, 1/12/99; *Hopey/Shelly, Pittsburgh Post-Gazette*, 1/11/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 1/12/99

Platte River Habitat Preservation: The *Central Nebraska Public Power and Irrigation District* has signed an agreement to preserve nearly 4,000 acres of "prime Platte River bottomland" as wildlife habitat. The land will help fulfill the company's obligation to obtain 4,200 acres of wildlife habitat along the river as a power plant licensing condition. Sources: Paul Hammel, *Omaha World-Herald*, 1/6/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 1/6/99

Southern Water Pact: Hope is fading that negotiators from Florida, Georgia and Alabama will strike a court ordered agreement on a water-sharing plan for the Chattahoochee River. Georgia seeks to retain more water upstream in Lake Lanier, but Alabama and Florida "want the water to keep coming." Only once before on the East Coast have states tried to divide their shared waters, "and never on this scale." After eight years of talks, the states are stuck in a stand-off. At risk is "one of the most diverse ecosystems in the world," according to Constance Hunt of

the *World Wildlife Fund* (WWF). WWF VP William Eichbaum wrote in a letter to the editor of *USA Today* that unchecked urban growth is "stripping this biological treasure chest" of its water and that "the entire regional river system is under critical stress" (12/1). WWF has launched a project to conserve the rivers of the Southeast, which it says are threatened by habitat degradation and invasive species as well as changes in water quantity. Source: *WWF release*, 12/1/98

Tax Breaks for River Protection: Restructuring of the electricity industry and a proposed pilot program that would grant tax credits to property owners who agree to protect river-banks along "scenic" waterways are among the top issues facing Mississippi lawmakers in 1999. Sources: Reed Branson, *Memphis Commercial Appeal*, 1/4/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 1/6/99

Tennessee Permit System: Saying that their policies "don't always work," Tennessee Dept. of Environment and Conservation (DEC) regulators plan to change the way permits are issued to developers whose projects damage streams. DEC official Paul Davis said even when developers comply, streams and surrounding habitat often deteriorate. He supports establishing a comprehensive, or county-wide permit system. Sources: Tom Charlier, *Memphis Commercial Appeal*, 12/1/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 12/4/99

Texas Aquifer Pumping: A Texas judge has ruled that the *Edwards Aquifer Authority* illegally adopted water pumping limits that ration water among municipalities. State District Judge Joseph Hart said the aquifer authority failed to follow the Texas Administrative Procedure Act by not writing an order giving "reasoned justification" for the rules when it adopted them on 1/20/99. The ruling implements an interim pumping authorization that allows all aquifer users to pump as much water as they ever did in one year between 1972 and 1993. The *Sierra Club* previously has said that without pumping limits, the springs that support endangered wildlife, including fish and salamander species, are threatened. Sources:

AP/Dallas Morning News, 12/3/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 12/8/98

Timber to Textbooks: A new formula that directs revenues to Ohio schools from timber sales in state forests has environmentalists worried that the stronger "timber to textbooks" link will mean more logging. Schools in forested areas of Ohio in 1998 received a "windfall" of more than \$500,000 from the Ohio Division of Forestry under the program that distributes 40% of gross logging revenues to local schools. Before the formula was revised in 1996, schools received no logging revenues. The changes in Ohio come at a time when the U.S. Forest Service has proposed to pay a flat rate to communities from timber sales in national forests, a move applauded by environmentalists for eliminating logging incentives. Sources: Randall Edwards, *Columbus Dispatch*, 1/10/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 1/13/99

TVA Environmental Cleanup: Tennessee Valley Authority (TVA) Chair Craven Crowell wants the federal utility to "show leadership in cleaning up the environment" and "set the benchmark." TVA plans to examine its options for the partially completed Bellefonte nuclear plant in Alabama following Energy Secretary Bill Richardson's decision in December not to use it for producing tritium. One option is to convert the Bellefonte facility into a gas-fired plant. The *Lexington Herald-Leader* lauded TVA's pledge to maintain its Land Between the Lakes nature preserve as "good news to all who treasure the beautiful preserve". Sources: AP/Lexington Herald-Leader/others, 1/4/99; and Rachel Zoll, AP/Birmingham News online, 1/4/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 1/6/99

USFS Grazing Policy Changes: "Spurred by lawsuits from without and new leadership from within," the U.S. Forest Service (USFS) is changing its land management practices to "better protect ecologically sensitive" areas, a shift that is having "a dramatic impact on Southwest ranchers". With USFS environmental assessments calling for many ranchers to minimize the effects

of grazing on public land by reducing their herds, several ranches find "their very survival is now in question." But cattle ranches that depend on federal land for grazing represent a small segment of the economy of the West, according to *University of Montana* economist Thomas Michael Power. He said 11 western states get nearly one-eighth of their livestock feed from federal lands, and nationally, 2% of cattle feed comes from federal grazing lands. Now "vast tracts of publicly owned forest and plains are viewed as more valuable for recreation, wildlife and aesthetics," and "some have suggested that tourism is the future" for private ranches that have long utilized large grazing allotments. Meanwhile, in New Mexico elk grazing may be causing as much damage to environmentally sensitive areas as livestock, said a USFS environmental assessment. The USFS said elk management in the Gila is a major issue because elk eat the same amount of forage as a yearling cow. The number of elk has increased steadily since the 1970's and current populations could nearly triple in 10 years if no control measures are taken. To address the growth, the USFS is working with the New Mexico Dept. of Game and Fish to develop hunting strategies. Cattle ranchers were pleased with the report because the elk damage streamsides and cause problems for ranchers, said Caren Cowan of the *New Mexico Cattle Growers Assoc.* However, the environmentalist group *Forest Guardians* disagrees with the report, saying the USFS is blaming elk for problems caused by livestock. Like elsewhere, New Mexico ranchers fear that an honest look at how grazing has harmed New Mexico's rivers will result in cattle being removed from public lands. The U.S. Bureau of Land Management agreed to study how to manage land along New Mexico's rivers to settle a 1996 lawsuit. The study will result in four habitat management plans for different areas. Sources: Tom Kenworthy, *Washington Post*, 11/29/98; AP/Albuquerque Journal, 12/4/98; Ben Neary, *Santa Fe New Mexican*, 12/6/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 11/30 and 12/7/98

Virginia's Rivers Cleanup: Virginia environmental officials should have included "scores" of additional waterways and the Chesapeake Bay on its 4/98 list of polluted waters, according

to the US EPA, which says it will expand the list. The agency in November told Virginia officials that it will add about 100 sections of rivers and estuaries to the state's list of about 240. Once a waterway goes on the list, the state must prepare a plan for pollution reduction. Meanwhile, Virginia Gov. James Gilmore (R) in early December announced that he will ask the General Assembly to spend \$48 million to fight pollution in Virginia's rivers. Environmentalists are pleased with Gilmore's announcement. They attacked former-Gov. George Allen's administration for its poor environmental policy and Gilmore had served as attorney general under that administration. If the General Assembly approves the plan, \$24 million would be spent to reduce pollution from factories and sewage plants along the Rappahannock, York and James rivers. The cities of Richmond and Lynchburg would receive \$11.3 million to improve their sewers which overflow during heavy storms. The Virginia Dept. of Conservation would receive \$9.8 million to fight problems like nutrient runoff. The rest of the funds would be spent on smaller water-quality projects. Sources: AP/Lexington Herald-Leader/others, 1/4/99; Rachel Zoll, AP/Birmingham News online, 1/4/99; Rex Springston, *Richmond Times-Dispatch*, 12/2/98; R.H. Melton, *Washington Post*, 12/8/98; Springston/Hardy, *Richmond Times-Dispatch*, 12/8/98; Larry O'Dell, *Washington Times*, 12/8/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 12/2 and 12/8/98

Clean Water Action Plan Update

Since the Clean Water Action Plan (CWAP) was released by President Clinton and Vice President Gore last February, several significant milestones have been reached. Summaries of some key CWAP milestones follow:

Joint Animal Feeding Operation (AFO) Strategy: The draft strategy proposes a national performance expectation for all AFOs to develop and implement Comprehensive Nutrient Management Plans (CNMPs). CNMPs would establish clearly defined nutrient management goals and address feed management, manure handling and storage,

land application of manure, record keeping, and other manure utilization options. The vast majority of AFOs would develop and implement CNMPs through voluntary programs, while high risk operations would be required to obtain permits through the Clean Water Act permit program implemented by the states and US EPA. A key component of the strategy is the identification of technical and financial assistance to help AFO owners and operators develop and implement sound CNMPs. The public comment period on the draft strategy ended on 1/15/99.

Final Unified Watershed Assessments: The Plan calls upon states and tribes to work in cooperation with federal, interstate, and local agencies, watershed-based organizations, and the public to identify watersheds most in need of restoration and to develop restoration action strategies. Last June, US EPA, USDA, and other federal agencies developed a framework to assist states and tribes in preparing unified watershed assessments (UWAs), the first step in identifying watersheds in need of action. States were encouraged to draw from existing water quality data and piece together what this information says about overall watershed conditions. After receiving feedback on drafts from an interagency workgroup and the public, 56 states and territories, the District of Columbia, and 13 tribes submitted final UWAs in October. The next step will be to map the results of these UWAs. A large part of the new resources proposed by the President's FY 99 budget will be used to implement the resulting restoration strategies. For more information, visit EPA's website at www.epa.gov/owowwtr1/cleanwater/uwafinal/uwa.html.

State Coastal Polluted Runoff Control Programs: The Plan calls for improved efforts to address polluted runoff in sensitive coastal watersheds. The National Oceanic and Atmospheric Agency (NOAA) and US EPA conditionally approved all 29 of the submitted State Coastal Nonpoint Pollution Control Programs in June 1998. All programs were to be fully approved by December 1999 with appropriate state-enforceable policies.

Conservation Reserve Enhancement Program (CREP) Guidance: The Farm

Services Agency released final guidelines on the CREP program, a state-federal conservation partnership program targeted to address significant water quality, soil erosion, and wildlife habitat issues related to agricultural land use. The program uses financial incentives to encourage farmers and ranchers to voluntarily enroll in contracts of 10 to 15 years in duration to remove lands from agricultural production. For more information, visit the CREP website at www.fsa.usda.gov/dafp/cepd/crep/crephome.htm.

Contaminated Sediment Strategy: Last April, US EPA released a Contaminated Sediment Management Strategy that summarizes the Agency's understanding of the extent and severity of sediment contamination and describes a framework to reduce ecological and human health risks posed by sediment contamination. EPA estimates that 10% of the Nation's lakes, rivers, and bays have sediment contaminated with toxic chemicals that can kill fish living in those waters or impair the health of people and wildlife who eat contaminated fish. For more information, visit EPA's website at www.epa.gov/OST/cs/stratndx.html.

Plan for Wetlands Status and Trends Reporting: The interagency group on wetlands issued a final plan for developing a single, improved wetlands status and trends report. This report should be issued by 2000. The leads for this project are the White House and the Wetlands Working Group.

Fish Consumption Safety: Last July, US EPA sent letters concerning fish consumption advisories to state environmental, public health, and natural resource management agencies and to all tribes that operate the national water program. The letters emphasized the importance of a risk-based fish consumption advisory program and asked states and tribes to compare their existing fish advisory programs with US EPA's National Guidance on Fish Consumption Advisories.

Nutrient Assessment Strategy: Last June US EPA released a national strategy for the development of water quality criteria and standards for nutrients. CWAP calls for EPA to publish criteria (i.e., scientific information concerning harmful levels of a pollutant) for nutrients by the year 2000. These criteria

will be used by states to develop numeric nutrient provisions of state water quality standards. The new strategy describes the process for developing criteria that are appropriate for various types of waterbodies and different regions of the country.

Source Water Assessment Agreement: A key element of CWAP is the integration of public health and aquatic ecosystem goals. Under an agreement yet to be signed, 10 federal agencies will commit to helping states, tribes, and local communities design and implement their drinking water source assessment and protection programs within a watershed framework. The State Source Water Assessment and Protection Program, developed under the mandate of the Safe Drinking Water Act Amendments of 1996, requires all states to complete assessments of their public drinking water supplies to determine susceptibility to potentially significant contaminant sources within their source water areas. The federal agencies will direct program authorities, technical assistance, data, and enforcement resources to help integrate source water goals with watershed restoration priorities. The agencies will agree to:

- Create partnerships between federal and state regional and field offices. Improve access to data held by the different agencies and work cooperatively to develop a clearinghouse for information on these databases;
- Coordinate drinking water source assessment and protection efforts with related CWAP action items; and
- Develop performance measures.

National Contingency Plan for Harmful Algal Blooms: The National Oceanic and Atmospheric Administration (NOAA), US EPA, the Food and Drug Administration, the U. S. Geological Survey, and the Centers for Disease Control, are developing a detailed federal response plan for harmful algal blooms and other major events in coastal waters. NOAA, the coordinating agency, has received comments from state and federal agencies and is working to finalize the plan. The plan provides individual states with federal expertise and support to immediately respond to *Pfiesteria* outbreaks, fish lesions, and fish kills; and to associate threats to public health.

National Harmful Algal Blooms Research and Monitoring Strategy: This strategy serves as a framework to coordinate all scientific and management activities related to *Pfiesteria*-like organisms. Implementation of the strategy is comprised of many ongoing efforts, including completion of the National Contingency Plan for Harmful Algal Blooms and operation of the multi-agency program on the Ecology and Oceanography of Harmful Algal Blooms (ECOHAB). Research funding through ECOHAB is currently being dispersed and funding opportunities for next year will be announced later.

Information about the budget and major CWAP milestones can be found at: www.cleanwater.gov/

Source: *Watershed Events*, EPA 840-N-98-002, Fall 1998

Clean Boating Partners Program

Next July, marinas, boatyards, and marine dealers will be able to proclaim their dedication to clean water by flying a colorful flag. Leading recreational marine organizations met in Fort Lauderdale, FL, on 11/3 to develop an awards program for publicly recognizing marinas, boatyards, and marine dealers who voluntarily take the pledge to practice and promote clean boating. Named the National Environmental Excellence Awards Program, it builds on the National Clean Boating Campaign launched by the *Marine Environmental Education Foundation* (MEEF) in 1998. The Clean Boating Campaign now has 618 partners, and interest is swelling, according to MEEF's president, Neil Ross.

The excellence awards will recognize those partners who have gone beyond implementing clean practices to promoting them to their customers. According to Ron Stone, chair of the awards task force, participants who agree to follow recommended clean boating practices will qualify for a certificate of recognition and the right to fly a distinctive flag identifying them as award winners. Compliance, though completely voluntary, will be subject to verification and periodic review by MEEF's regional representatives.

Award criteria, a pledge, and the flag will be ready for the 1999 boating season, which MEEF will officially kick off with the 1999 Clean Boating Week, July 10-18. "The marina and boat-building industries have long recognized that clean water is good for business, and the flag program is a good way to recognize their efforts and to publicize the need for clean boating practices," says Stone.

Recommended practices for Clean Boating Partners include the following:

- Arrange for recycling service on used oil solvents and oil filters;
- Demonstrate economic and environmental benefits of using dustless sanders and grinders;
- Offer free pump-outs to all boaters during National Clean Boating Week, 7/10-18/99, and register to be on MEEF's national pump-out publicity list;
- Install a national pump-out sign showing the new logo and slogan;
- Designate a pet walk area for dogs;
- Post signs describing how to dispose of litter and fish cleaning waste and clearly mark disposal areas;
- Post signs showing boaters clean fueling techniques; and
- Organize on-site training for marina managers and staff on best management practices; give certificates of training.

For more information contact: MEEF/NCBC, P.O. Box 37, Kingston, RI 02881, (401) 792-9025, Fax (401) 782-2116, neil.ross@worldnet.att.net; or on the Web Site at www.cleanboating.org/info/boat5b.htm.

Source: *NonPoint Source New Notes*, December 1998, Issue #55

Save Our Streams Workshops

Several wetlands workshops are being offered around the country by the *Izaak Walton League of America* (IWLA) as part of the League's Save Our Streams (SOS), Wetlands Conservation and Sustainability Initiative. The goal of SOS's wetlands initiative is to encourage citizens to take a proactive role in conserving and restoring wetlands.

The one- and two-day workshops are geared toward citizens, educators, community and business leaders, and others with a non-science background. Morning sessions consist of classroom

lectures on local wetland hydrology, vegetation, and soils; relevant regulations; using resources such as plant keys; and wetland functions and values. Afternoons will be devoted to field training sessions in which participants will see examples of plant adaptations, explore differences between upland and wetland soils, examine the effects of human impacts on wetlands and identify vegetation.

In the two-day workshops, participants also will learn techniques for setting up transects, monitoring vegetation, and sampling soils. Each participant will receive a copy of the *Handbook for Wetlands Conservation and Sustainability*. The handbook is also offered through SOS for \$35.00 plus \$5.00 shipping and handling by calling (800) BUG-IWLA (284-4952) or by e-mail sos@iwla.org.

The one-day workshops will be offered in conjunction with *Terrene Institute's* Communities Working for Wetlands conferences. These conferences will be held in New Orleans (February 18-20), San Francisco (March 18-20), Indianapolis (April 8-10) and Boston (May 6-8). SOS workshops will take place on the day before each conference. In addition, IWLA is seeking groups that are interested in hosting a workshop. For more information, call Leah Graff, SOS Technical Coordinator; or Julie Middleton, SOS Program Director, at (800) BUG-IWLA (284-4952).

Climate Change Update

Last year was the "hottest" year on record, and rising temperatures are further evidence of global warming, according to reports released in early January by NASA and the National Oceanic and Atmospheric Admin. (NOAA). The global mean temperature in 1998 was 58.1 °F, 1.2 °F above the long-term average value of 56.9. This was the 20th consecutive year with a global mean temperature exceeding the long-term average. The findings are based on data collected from thousands of land- and ocean-based meteorological stations by NOAA's National Climate Data Center in North Carolina. Last year's warmth was linked in part to a particularly strong bout of the El Nino weather phenomenon. And according

to NASA, the most unusual temperature readings in 1998 were in North America. The U.S.'s average temperature in 1998 was 54.62 °F, creating a virtual tie with the warmest year on record, 1934.

For the first time, however, a team of government and university scientists has found a high-resolution, 15,000 year record of rain-induced erosion in sediment layers of an Ecuadorian lake that indicates El Nino-like climate fluctuations became more common about 5,000 years ago. Writing in the current issue of *Science*, the researchers found that a core sample of layers of sediment deposited during severe storms in Lake Pallacacocha in southwestern Ecuador closely correlates with El Ninos that are known to have occurred over the past 200 years.

"The full sediment record indicates that 15,000 years ago severe El Nino-like storms occurred at least about every 15 years, and that they have since occurred with progressively increasing frequency. Over the past 5,000 years, storms from El Nino-like climate fluctuations have occurred about every 2 - 8.5 years, possibly due to enhanced trade winds," said the study's lead author, Donald T. Rodbell of *Union College*, Schenectady, NY. The authors point out that there are proxy records of prehistoric El Ninos in a variety of natural archives, including corals, ice cores, tree rings, flood deposits, beach ridges, archeological middens and soils. But high-resolution records in corals and ice cores are limited to the past 2,000 years, while longer records are not continuous.

Sea surface temperatures near this part of Ecuador are among the first to warm in the region during the onset of an El Nino, when rainfall greatly increases. Since extreme El Nino-driven storms are known to deposit organic and inorganic debris in coastal basins, the scientists analyzed a 9.2-meter-long core of sedimentary rock obtained in June 1993 from Lake Pallacacocha, which is about 75 kilometers from the Pacific Ocean. These layers of sediment, known as clastic laminae, are made up of fragments of vegetation that were washed into the lake from the surrounding landscape during torrential rain storms.

The sediment record from 1800 to 1976 A.D. reveals a close match between the layers of clastic laminae and moderate to severe El Ninos. Of the 17 El Ninos that occurred in this time period, 11 correlate within two years of major layers of clastic laminae, and one is within three years. The other five severe El Ninos during this period occurred within two years of relatively minor layers of clastic sediment. The eight severe El Ninos of the past 100 years correlate precisely with clastic laminae in the core.

In addition to Rodbell, authors of the *Science* paper are J. H. Newman, Department of Geology, *Union College*, Schenectady, NY; G. O. Seltzer, Department of Earth Sciences, *Syracuse University*, Syracuse, NY; D. M. Anderson, National Environmental Satellite, Data and Information Service, NOAA, Boulder, CO; M. B. Abbot, Department of Geosciences, *University of Massachusetts*, Amherst, MA; and D. B. Enfield, Atlantic Oceanographic and Meteorological Laboratory, NOAA, Miami, FL.

A second new study by U.S. government researchers concludes that there is little evidence that global warming has made floods or droughts more common along U.S. streams. "If anything, the trend since at least the 1940s, ... is that the continental U.S. is getting wetter, but less extreme," said Harry Lins, a hydrologist with the USGS and co-author of a report published in *Geophysical Research Letters*. The researchers looked at daily stream flow records of 395 relatively natural streams going back as far as 1914. The data showed that daily average stream flows and the annual minimum increased at nearly a third of the gauges. But the highest flows increased at only 4% of the gauges and fell at 5%.

"Most experts believe the increased flood damage and vulnerability to drought [seen in the 1990s] have been the result of people building more structures on flood plains and moving to areas with less reliable water supplies than drastic changes in weather patterns".

Sources: Seth Borenstein, *Philadelphia Inquirer/others*, 1/12/99; NOAA release, 1/12/99; *AP/Boston Globe/others*, 1/12/99; Lee Bowman, *Scripps-Howard*

News/Washington Times, 1/14/99; and National Journal's *GREENWIRE*, *The Environmental News Daily*, 1/12 and 1/14/99

NOTE: All NOAA press releases, and links to other NOAA material, can be found on the Internet at <http://www.noaa.gov/public-affairs>.

Matters of Scale

- Number of people killed in international terrorist attacks in 1997 - 221
- Number of people killed by human-exacerbated floods in the past 8 months - 10,914
- Population of the United States - 270 million
- Number of the 400 million people living in China's Yangtze River watershed who lost crops, were forced out of their homes or businesses, or suffered other damages from the flooding of the Yangtze River in 1998 - 240 million
- Population of Italy - 57 million
- Number of people flooded out of their homes in China in 1998 - 56 million

Source: *World Watch*, November/December 1998

A Focus on Sustainability - Missouri River Conference

Sustaining the Missouri River for Future Generations is the theme for the 3rd Annual Conference on the Natural Resources of the Missouri River Basin. The conference continues a tradition initiated in 1997 to provide a forum for information exchange on the stewardship, ecology, and management of the Missouri River and its flood plain.

The Conference begins with a field trip on Sunday to Oahe Dam and Powerhouse. At the evening social Stephen Kinsey from the *Environmental System Research Institute (ESRI)* will give a special multi-media GIS



Conference on Natural Resources
of the Missouri River Basin

historical-biographical presentation on Captain Grant Marsh, Missouri River pilot from 1840-1880. The Plenary on Monday includes Native American perspectives from Gregg Bourland, Cheyenne River Sioux Tribe Chairman, Eagle Butte, SD, and Wes Martel, President of *Wind River Associates*, Fort Washakie, WY. The historical perspective of sustainability will be discussed by Daniel Botkins of the *Center for the Study of the Environment* in Arlington, VA, in his presentation on *Natural History Lessons of Lewis and Clark: Pre-settlement Landscapes and Modern Uses of Science*. Ed Whitelaw from *ECONorthwest* in Eugene, OR, will introduce economic considerations with his talk and Richard Marzolf from the USGS will share

his experiences with the Glen Canyon Dam Experiment. Tuesday's panel includes representatives from economic development, recreation, tribes, environment, public works, tourism, and bank stabilization. Discussion will address: 1) How does your interest affect sustainability of the river for multiple use?; and 2) How do other uses of the river affect the sustainability of your interest?

Over forty paper presentations will be made at the conference covering a wide range of Missouri River topics. The Monday evening social includes a newly updated Missouri River slideshow from Gene Zuerlein, Nebraska Game and Parks Commission, showing the entire extent of the river and highlights its

diversity. Tony Dean, outdoor writer, television and radio producer, multi-species angler, and river/reservoir system expert, will be the banquet speaker Tuesday night.

Contact: See Meetings of Interest.

Web Based Water Management Course

Beginning with the Spring 1999 semester *Kansas State University* will begin offering a Water Resource Management courses via the World Wide Web. For more detailed information about visit the KSU Web site at <http://www.dce.ksu.edu/dce/distance/waterquality.html>.

Meetings of Interest

March 2-4: International Symposium on Geographic Information Systems in Fishery Sciences, Seattle, WA. Contact: Tom Nishida, 011/81-543-366043, tnishida@enyo.affrc.go.jp

March 3-4: Applied River Geomorphology and Biotechnical Engineering Workshop, Horizon Convention Center, Muncie, IN. Sponsored by the Indiana Chapter of the American Fisheries Society. Contact: (765) 285-8845 or (765) 285-8825, tmccomis@bsu.edu rtlauer@bsu.edu.

March 9-11: 55th Annual UMRCC Meeting, Radisson Hotel, La Crosse, WI. Contact: Ron Benjamin, Wisconsin Dept. of Natural Resources, 3550 Mormon Coulee Road, La Crosse, WI 54601, (608) 785-9012.

March 15-17: State of the Rivers: A conference on American Southeastern Rivers, Chattanooga, TN. Sponsored by World Wildlife Fund, this conference will discuss the biological importance and imperilment of southeastern rivers. A joint plenary session with the Tennessee Aquarium's Freshwater Mollusk Symposium will occur on the 17th. Contact: Quinn McKew, (202) 861-8369, or Quinn.Mckew@wwfus.org.

March 16-19: Ecosystem Effects on Fishing, Montpellier, France. Contact: Henrik Gislason, 011/45-

33963361, hg@dfu.min.dk

March 17-19: Freshwater Mollusk Conservation Society 1st Annual Symposium, Clarion Hotel, Chattanooga, TN. Contact: Paul Johnson, (423) 785-4074, pdj@tennis.org, <http://www.sari.org>.

March 21-24: Sustaining the Missouri River for Future Generations, 3rd Annual Missouri River Conference, Ramkota Inn River Centre, Pierre, SD. Contact: Jeanne Heuser, USGS-BRD, Environmental and Contaminants Research Center, 4200 New Haven Road, Columbia, MO 65201, (573) 876-1876, FAX (573) 876-1896, jeanne_heuser@usgs.gov.

March 22-27: Wetlands Engineering and River Restoration Conference, Denver, CO. Sponsored by the American Society of Civil Engineers. Contact: ASCE, Conferences and Expositions, P.O. Box 832, Somerset, NJ 08875-0832, (800) 548-ASCE w/in the U.S., and (703) 295-6050 outside the U.S., or FAX (703) 295-6333.

March 26-30: 64th North American Wildlife and Natural Resources Conference, Hyatt Regency San Francisco Airport, Burlingame, CA. Contact: Richard Mc Cabe, (202) 371-1808.

April 6-8: Environmental Monitoring and Assessment Program Symposium on Western Ecological Systems: Sta-

tus, Issues, and New Approaches, Holiday Inn Fisherman's Wharf, San Francisco. Contact symposium coordinator, (781) 544-0026, symposium@tpmc.com.

April 12-15: EPRI Conference on Power Plant Impacts on Aquatic Resources, Renaissance Waverly Hotel, Atlanta, GA. Contact: Cindy Layman, Conference Coordinator, P.O. Box 10412, Palo Alto, CA 94303-9964, (650) 855-8763, or FAX (650) 855-2166.

April 14-15: MICRA Executive Board Meeting, St. Louis, MO.

April 22-23: Mississippi River Research Consortium Annual Meeting, Yacht Club Resorts, La Crosse, WI. Contact: Richard Anderson, (309) 298-1553, randerson@wiu.edu.

April 26-30: 9th International Zebra Mussel and Aquatic Nuisance Species Conference, Duluth Entertainment Convention Center, MN. Contact: Elizabeth Muckle-Jeffs, (800) 868-8776, profedge@renc.igs.net.

May 9-14: 15th International Symposium on Biotelemetry, Juneau, AK. Contact: John H. Eiler, (907) 789-6033, john.eiler@noaa.gov.

May 10-11: 6th Annual LMRCC Meeting, Holiday Inn Memphis East, Memphis, TN. Contact: Ron Nassar,

LMRCC Coordinator, (601) 629-6602.

May 13-14: 26th Annual Conference on Ecosystem Restoration and Creation, Tampa, FL. Contact: Frederick J. Webb, (813) 757-2104, webb@mail.hcc.cc.fl.us.

May 16-19: National Watershed Coalition's 6th National Watershed Conference, Austin, TX. Conference theme is "Getting the Job Done at the Ground Level". Contact: John W. Peterson, Executive Director, National Watershed Coalition, 9304 Lundy Court, Burke, VA 22015-

3431, (703) 455-6886, FAX (703) 455-6888, jwpeterson@erols.com.

May 23-28: 10th International Soil Conservation Organization Conference - Sustaining the Global Farm, Local Action for Land Stewardship, Purdue University, West Lafayette, IN. Contact: Mark Nearing, Purdue University, 1196 SOIL Bldg., West Lafayette, IN 47907-1196, (765) 494-8673, FAX (765) 494-5948, isco99@ecn.purdue.edu.

May 25-28: 47th Annual Meeting of the North American Benthological Society, Duluth, MN. Contact:

Stephen W. Golladay, (912) 734-4706, <http://www.benthos.org>.

June 1-4: Evaluating the Benefits of Recreational Fishing, The Fisheries Centre, University of British Columbia, Vancouver, BC. Contact: Gunna Weingartner, (604) 822-0618, events@fisheries.com.

August 29-Sept. 2: 129th Annual Meeting of the American Fisheries Society, Adam's Mark Hotel, Charlotte, NC. Contact: Betsy Fritz, (301) 897-8616, ext. 212, bfritz@fisheries.org

Congressional Action Pertinent to the Mississippi River Basin

Nothing to report



River Crossings

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New MICRA Web Site

MICRA's Web Page has moved to: wwwaux.cerc.cr.usgs.gov/MICRA/. We have changed and updated it's format, added new features, and provided for downloadable .pdf files on various subjects. Additional information and data links will be added as they become available. Also, *River Crossings* can now easily be accessed and downloaded via the Web Page using Adobe Acrobat Reader. If you prefer to receive your copy of *River Crossings* electronically, please let us know and we will delete your name from our mailing list. We also have provided links to all of our member agency and entity web sites. Come visit us!

Invasive Species Executive Order

On February 3rd, President Clinton signed the Invasive Species Executive Order (EO). This EO is intended to prevent the introduction of invasive species, provide for control measures and minimize the economic, ecological, and human health impacts they cause.

The EO defined "Alien species" as "any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native" to a particular ecosystem. "Control" was defined as "eradicating, suppressing, reducing, or managing invasive species populations, preventing spread of invasive species from areas where they are present, and taking steps such as restoration of native species and habitats to reduce the

effects of invasive species and to prevent further invasions". "Introduction" was defined as "the intentional or unintentional escape, release, dissemination, or placement of a species into an ecosystem as a result of human activity". "Invasive species" were defined as "alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health".



"Help stop the Invaders!"

Under the EO each Federal agency whose actions may affect the status of invasive species shall, to the extent practicable and permitted by law: (1) identify such actions; (2) use relevant programs and authorities (subject to the availability of appropriations,

and within Administration budgetary limits) to:

- prevent the introduction of invasive species,
- detect and respond rapidly to and control populations of such species in a cost-effective and environmentally sound manner,
- monitor invasive species populations accurately and reliably,
- provide for restoration of native species and habitat conditions in ecosystems that have been invaded,
- conduct research on invasive species and develop technologies to prevent introduction and provide for environmentally sound control of invasive species, and
- promote public education on invasive species and the means to address them; and
- (3) not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless, pursuant to guidelines that it has prescribed, the agency has determined and made public its determination that the benefits of such actions clearly outweigh the

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potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions.

The EO establishes an *Invasive Species Council* (ISC) whose members include the secretaries of State, Treasury, Defense, Interior, Agriculture, Commerce, and Transportation; as well as the Administrator of the Environmental Protection Agency. The ISC will be Co-Chaired by the secretaries of Interior, Agriculture and Commerce. It may also invite additional Federal agency representatives to be members, including representatives from subcabinet bureaus or offices with significant responsibilities concerning invasive species, and may prescribe special procedures for their participation. The Secretary of the Interior, with concurrence of the Co-Chairs, will appoint an ISC Executive Director and provide for staff and administrative support.

The EO also directs the Secretary of the Interior to establish an Advisory Committee (AC) to provide information and advice for ISC consideration. After consultation with other ISC members, the Interior Secretary will appoint AC members who represent the stakeholders. Among other things, the AC will recommend plans and actions at local, tribal, State, regional, and ecosystem-based levels. Additionally, the AC will act in cooperation with stakeholders and existing organizations.

The ISC will:

- provide national leadership regarding invasive species;
- oversee implementation of the EO;
- see that the Federal agency activities concerning invasive species are coordinated, complementary, cost-efficient, and effective, relying to the extent feasible and appropriate on existing organizations addressing invasive species, such as the *Aquatic Nuisance Species Task Force*, the *Federal Interagency Committee for the Management of Noxious and Exotic Weeds*, and the *Committee on Environment and Natural Resources*;
- encourage planning and action at local, tribal, State, regional, and ecosystem-based levels to achieve the goals and objectives, in cooperation with stakeholders and existing organizations addressing invasive species;
- develop recommendations for international cooperation in addressing invasive species;
- develop, in consultation with the Council on Environmental Quality, guidance to Federal agencies pursuant to the National

Environmental Policy Act on prevention and control of invasive species, including the procurement, use, and maintenance of native species as they affect invasive species;

- facilitate development of a coordinated network among Federal agencies to document, evaluate, and monitor impacts from invasive species on the economy, the environment, and human health;
- facilitate establishment of a coordinated, up-to-date information-sharing system that utilizes, to the greatest extent practicable, the Internet. This system shall facilitate access to and exchange of information concerning invasive species, including, but not limited to, information on distribution and abundance of invasive species; life histories of such species and invasive characteristics; economic, environmental, and human health impacts; management

techniques, and laws and programs for management, research, and public education; and

- prepare and issue a national Invasive Species Management Plan.

The EO also directs federal agencies to pursue the duties set forth for them in the EO in consultation with the (ISC), consistent with the ISC's Invasive Species Management Plan (required by the EO), and in cooperation with stakeholders, as appropriate, and, as approved by the Department of State, when federal agencies are working with international organizations and foreign nations.

Within 18 months the EO directs the ISC to prepare and issue the first edition of its National Invasive Species Management Plan (Management Plan), which shall detail and

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River Crossings is a mechanism for communication, information transfer, and coordination between agencies, groups and persons responsible for and/or interested in preserving and protecting the aquatic resources of the Mississippi River Drainage Basin through improved communication and management. Information provided by the newsletter, or opinions expressed in it by contributing authors are provided in the spirit of "open communication", and do not necessarily reflect the position of MICRA or any of its member States or Entities. Any comments related to "River Crossings" should be directed to the MICRA Chairman.

recommend performance-oriented goals and objectives and specific measures of success for federal agency efforts concerning invasive species. The Management Plan shall recommend specific objectives and measures for carrying out each of the federal agency duties established in the EO and set forth steps to be taken by the ISC to carry out the duties assigned to it by the EO. The Management Plan will be developed through a public process and in consultation with federal agencies and stakeholders. It's first edition will include: a review of existing and prospective approaches and authorities for preventing the introduction and spread of invasive species, including those for identifying pathways by which invasive species are introduced and for minimizing the risk of introductions via those pathways, and identify research needs and recommend measures to minimize the risk that introductions will occur. Such recommended measures shall provide for a science-based process to evaluate risks associated with introduction and spread of invasive species and a coordinated and systematic risk-based process to identify, monitor, and interdict pathways that may be involved in the introduction of invasive species. If recommended measures are not authorized by current law, the ISC will develop and recommend to the President, through its Co-Chairs, legislative proposals for necessary changes in authority.

The ISC will update the Management Plan biennially and concurrently evaluate and report on success in achieving the goals and objectives set forth. The Management Plan will also identify the personnel, other resources, and additional levels of coordination needed to achieve it's identified goals and objectives. Within 18 months after measures have been recommended by the ISC in any edition of the Management Plan, each Federal agency whose action is required to implement such measures will either take the action recommended or provide the ISC with an explanation of why the action is not feasible. The ISC will assess the effectiveness of the EO no less than once every 5 years and report to the Office of Management and Budget on whether the EO should be revised.



"round goby" a Great Lakes invader

Freshwater Ecosystems Under Severe Stress

Freshwater ecosystems worldwide have come under "severe" pressure, "even more than the much-publicized plight of the world's forests," according to a new UN report released on 3/22 to mark *World Water Day*. A "preliminary global assessment" by the *UN Environment Program* (UNEP) and the UK-based *World Conservation Monitoring Center* (WCMC) identifies 23 "hotspots" of freshwater biodiversity, including the African Great Lakes, the **Mississippi River basin**, Lake Titicaca on the Peru-Bolivia border and parts of



The Illinois River, a Mississippi River tributary, is a severely stressed ecosystem.

Madagascar and Tasmania. The report also lists 30 "priority" river basins – including the Nile, the Volta and the Mekong – that support high biodiversity but are vulnerable to pressures from human activity. WCMC's Brian Groombridge said, "Freshwaters are crucial to human life and wildlife [and] action to conserve their diversity and maintain their productivity is well overdue".

Freshwater fisheries, a major source of food, livelihood and recreation in many countries, are "increasingly threatened" by environmental degradation, according to the *UN Food and Agriculture Organization* (FAO). In a 3/24 release, the FAO said that more than 7.7 million tons of freshwater fish were caught in 1997, representing about 6% of the total global fish catch. "Industrialization, urbanization, deforestation, mining and agricultural land and water use" pose "the greatest threats" to inland fish production, the FAO said. Specific problems include the release of industrial and urban effluents, runoff of agrochemicals, impoundment and channelization of water bodies, excessive water diversion, soil erosion and other kinds of manipulation of rivers, lakes and flood plains.

Such problems are seen in most parts of the

world but are of special concern in Asian watersheds, which are "the most important areas of inland fish production globally." The FAO recommended better integration of water and land management. At the local level, fish production could be enhanced through periodic stocking of water bodies and other techniques. At the state and national level, the agency suggested that environmental, fishery, land and water agencies should work together more closely to prevent environmental degradation and rehabilitate aquatic habitats.

Sources: *UNEP release*, 3/22/99; *FAO release*, 3/24/99; and *National Journal's GREENWIRE, The Environmental News Daily*, 3/22, 3/24/99

Natural River Flows Beneficial to Farming?

For years, scientists have made it clear that endangered species like the pallid sturgeon need more natural river flows to survive on the Missouri River. However, increasing flows during the spring and lowering them in summer to mimic the river's natural flow remains the basin's most contentious issue.

But, a 1998 U.S. Army Corps of Engineers study, conducted as part of the preliminary revised draft-environmental impact statement (PRDEIS) for its Master Manual shows that not only do river wildlife species benefit with natural river flows, but floodplain farmers would be better off as well.

The Corps' preferred alternative for river management, in it's 1994 draft EIS, included a spring rise and a slight lowering of river levels in the summer. Floodplain farmers protested, claiming high spring flows would not allow them to properly drain their fields, shortening their growing season and hurting their profits, so the Corps agreed to study the interior drainage issue and revise its EIS.

The PRDEIS that came out in 1998 included a study showing that both wildlife and farmers benefit by a small spring rise and lower summer flows. Farmers benefitted most by having low flows and more consistently dry fields during the important summer growing season. Chad Smith, Missouri River Regional Representative for *American Rivers*, said, "Some may have been surprised by the results, but I think people are starting to understand that an altered river, not a natural river, is the harder one to live with."

The Corps' study was based on the results from six floodplain study sites below Sioux City, IA. It showed that under alternatives which increased dam releases by 10,000 cfs and 15,000 cfs, farmers (for the 45-year period from 1949-94) would have experienced 5.596 and 4.5% less monetary damages, respectively, than under the current water control plan. That means crop damages were greater under constant navigation flows than if a more natural flow had been maintained during the study period. Further, a groundwater study conducted at the same time by the Corps and published in the PRDEIS also shows benefits to farmers during a spring rise.

The Corps' two so called "fish and wildlife alternatives" (i.e. a spring rise of 10,000 cfs and 15,000 cfs, respectively from May 1 to June 15) were evaluated. Both of these alternatives support a full navigation season, although flows are lowered from mid-July through mid-August to minimum navigation service levels in order to support nesting birds such as the interior least tern and the piping plover. The two alternatives are designed to somewhat mimic pre-dam flows.

In addition to benefitting farmers, Smith said further that "... it would boost recreation on the entire river and lead to more dollars flowing through riverside communities in the basin states." "I can't think of a better way to manage the river and benefit more people," he added.

However, farmers remain skeptical, and have called on the USGS in Iowa and Missouri to further study the interior drainage and groundwater matters. But the Corps' data has many in the Missouri River basin thinking more alike. "I know most farmers don't want to agree with me, but the data cannot be ignored," said Smith. "It's time to come together and make sound decisions that benefit all of us and that help to make the Missouri River a river once again."

Source: Missouri Monitor, March 1999

Dam Removal Benefits

A draft report from a U.S. Army, Corps of Engineers' study projects "huge economic benefits" from breaching four dams on the lower Snake River, but federal officials argue that the data are unreliable. The report, leaked on 3/5 by environmental groups, is based on a survey of more than

4,700 households in the Pacific Northwest and California.

A consultant hired by the Corps asked participants if they would travel to the Snake River area if the river were restored to its natural water levels and salmon came back in fishable numbers. The survey suggested that as much as \$1.9 billion a year could be contributed to the region by sport fishers and up to \$3.3 billion by other recreational visitors, such as river rafters.

Current annual recreation spending at the four lower Snake reservoirs is \$33.6 million. Bill Arthur of the *Sierra Club* said, "Contrary to the prophets of doom, restoring the river and the salmon can bring substantial economic benefit". But Greg Graham, the Corps's program manager for the lower Snake River economic study, expressed "dismay" that the study had been released in draft form, calling the leak a "misrepresentation of a partially completed study".

Environmentalists say that a new Bonneville Power Admin. analysis also demonstrates the economic feasibility of breaching the four dams. The analysis, although incomplete, says that breaching the dams would boost the average residential electricity bill by an average of \$2 to \$5 a month. And Mark Glyde, of the *Northwest Energy Coalition* said, "If we want to be serious about saving salmon, we've got to be serious about taking out the Snake River Dams. I think \$2 a month is a very reasonable price to pay for these fish"

Meanwhile, more than 200 scientists on 3/23 asked Pres. Clinton to consider removing some federal dams on both the Columbia and Snake rivers to help restore dwindling salmon runs. In a signed letter, the scientists said current fish recovery efforts, which depend on barging fish around dams, are not sufficient to reverse the decline of threatened Snake River salmon stocks. Removing the dams entirely, the scientists say, offers "the best promise" of saving the salmon.

All of these appeals come as the Corps prepares a \$22 million analysis of the biological and economic effects of breaching the four dams. The report, scheduled for release in April, has been delayed. Accord-

ing to Graham a "schedule change was necessary to accommodate the National Marine Fisheries Service (NMFS) in preparing" its biological report -- a critical part of the study." The delay in the draft report will delay any federal recommendation on the dams "well into year 2000".

A coalition of corporations, local governments and tribal leaders is also working to save Northwest salmon species by matching volunteers and corporate financial grants with projects to restore the region's waterways. The coalition's program, *Team UP! For Watershed Health*, will be coordinated by the conservation group, *Stop Oregon Litter and Vandalism*.

Meanwhile, three California environmental groups on 3/18 filed a lawsuit to halt construction of the Seven Oaks Dam on the Santa Ana River, near Redlands, so modifications can be considered that could save the endangered San Bernardino kangaroo rat and two rare plants. The species are dependent on the flooding that the \$440 million dam is supposed to prevent, say the Tucson-based *Southwest Center For Biological Diversity*, the *California Native Plant Society* and the *Tri-County Conservation League*. The flooding creates open areas and deposits fresh sand, needed by the Santa Ana River woolly star, and spreads the seeds of the slender-horned spineflower. The groups say the dam can be modified to mimic flood conditions that will benefit the species, while still protecting farms and structures in Riverside and Orange counties from heavy floods

Also, in southern California several other environmental groups favor removing a dam near Ojai, CA, to help save the endangered southern steelhead trout, but "a growing number of critics say it would be costly, complicated and potentially dangerous for the few remaining steelhead." The Matilija Creek and other tributaries of the Ventura River make up one of the last stretches of steelhead habitat in southern California. The Matilija Dam was built after World War II to store water for area farmers and residents. The southern California steelhead was listed as endangered under the Endangered Species Act in 8/97, but the NMFS has not yet developed a plan to rescue the fish. Groups such as *Friends of the River*, the *Surfrider Foundation* and *Environmental Defense Center* are calling for removal of the dam, and the NMFS tentatively agrees. But studies by consultants and by researchers at the *University of California-Santa Barbara* suggest that removing the dam

could cost between \$64 and \$82 million, mostly to remove and dispose of sediment behind the dam. A cheaper alternative would be to lower the dam gradually and allow sediments to wash away, but this could exacerbate siltation and flooding downstream and "decimate the remaining steelhead populations." Other critics say the first priority should be building a fish ladder around the Robles Diversion Dam two miles downstream

In Washington state, last November the Skokomish Indian Tribe filed a claim with the Justice Dept. seeking \$5.7 billion for damages caused by the *Cushman Hydroelectric Project*, which provides electricity to Tacoma, WA. According to the tribe's claim, the *Cushman* project has not only drained the North Fork of the Skokomish River, but it has also reduced the flow in the main stem of the waterway by 40% and reduced biological productivity in the river.

In a victory for the \$200 million, 31-year-old salmon restoration program on the Connecticut River, Atlantic salmon have returned to the river after spending two years in the North Atlantic. Angelo Incerpi of the Vermont Dept. of Fish and Wildlife said, "We've had fish in the river for several years, but this is the first time we've been able to document spawning." The *Manchester [NH] Union Leader* reports that the salmon's return would not have been possible without help from regional electric utilities that built ladders and elevators to help the salmon bypass the river's dams.

Meanwhile, the *Fish for Cooper Creek Coalition* has charged the *Chugach Electric Assn.* with trying to "hoodwink" the Federal Energy Regulatory Commission by implying that the state of Alaska endorsed a \$750,000 project to raise the height of the Cooper Lake dam. The coalition alleges that *Chugach* intentionally distorted a letter from Alaska Natural Resources Commissioner John Shively to suggest that the project would have no effect on fish and wildlife. However, Shively's letter said there were no land-use problems associated with raising the dam, but did not extend that opinion to wildlife issues. The Cooper Lake dam has come under "increasing criticism" from both state and federal biologists who say it was responsible for killing Cooper Creek salmon runs in the 1960's.

Sources: Richard Cockle, *Portland Oregonian*, 3/8/99; AP/*Portland Oregonian*, 3/9/99; Jonathan Brinckman, *Portland Oregonian*, 1/8/99; AP/*Portland Oregonian*,

3/23/99; O'Bryant/Crampton, *Columbia Basin Bulletin*, 1/4-8/99 issue; Rocky Barker, *Idaho Statesman*, 1/8/99; Jonathan Brinckman, *Portland Oregonian*, 3/22/99; Bruce Richie, *Riverside [CA] Press-Enterprise*, 3/19/99; Gary Polakovic, *Los Angeles Times*, 12/7/99; AP/*Seattle Times*, 11/27/98; AP/*Manchester [NH] Union Leader*, 11/27/98; Craig Medred, *Anchorage Daily News*, 1/10/99; and National Journal's *GREENWIRE, The Environmental News Daily*, 12/1 and 12/7/98, 1/2, 1/11, 3/9, 3/22, and 3/23/99

Water Shortages, Markets and Wars

The growing scarcity of freshwater resources could spawn future wars, according to Klaus Toepfer, director-general of the UN Environment Program. In an interview appearing in the 1/1 issue of the journal *Environmental Science & Technology*, Toepfer said he is "completely convinced" that there will be future conflicts over natural resources, especially water. Toepfer said, "Everybody knows that we have an increase in population, but we do not have a corresponding increase in drinking water, so the result in the regional dimension is conflict."

The world will need 62% more fresh water in the next 25 years to maintain current standards of living, according to Klaus Siegert, the Asia regional water resources officer for the *UN Food and Agriculture Organization*. Siegert warned that there will be higher demands for water not only from a growing population but also from the industrial and agricultural sectors. According to UN projections, the number of countries facing water shortages will rise from the current 29 to 34 by 2025, assuming that renewable water resources remain undeveloped. By 2050, the population projected to be living in water-scarce countries will be between 1.06 billion and 2.43 billion, about 13-20% of the global population. Among the regions most affected are much of Africa, northwestern China, west and south India, parts of Pakistan and Mexico, and the western coasts of the United States and South America.

As the global water supply decreases, "competition for water, and for the power that control of water represents, is intensifying from Africa and Central Asia to Los Angeles and the Everglades," the *New York Times* reports. "Per capita water consump-

tion is rising twice as fast as the world's population," writes former Sen. Paul Simon in his new book *Tapped Out*. Simon said, "You do not have to be an Einstein to understand that we are headed toward a potential calamity." Countries that control water are "likely to be the big winners of the future." In particular, Turkey, which controls the flows of the Tigris and Euphrates rivers, is using its water as a tool of foreign policy by building a 50-mile undersea pipeline that would carry water to northern Cyprus. Turkish officials and foreign mediators hope that excess water can be sold to the ethnic Greek republic on the southern part of Cyprus as a way of promoting peace. Ishak Alaton, a Turkish businessman whose company has won the contract to build the Cyprus pipeline said, "You can't overstate [water's] importance. I firmly believe that just as the 20th century was the century of oil, the 21st century will be the century of water".

In what "may turn out to have been the



starting gun in a new global scramble" for water resources, the Canadian Parliament in January voted unanimously to ban bulk sales of water to foreigners. The moratorium will remain in place until an agreement is reached between federal officials and all 10 provinces. Canada holds 20% of the world's fresh water supply, but "motivated as much by raw nationalism as environmentalism," Canada "doesn't want to share a drop." Bill Blaikie, a member of Parliament from Manitoba said, "Water is as Canadian as hockey, as the Mounties, as the beaver". Some observers, though, say the moratorium "is just a temporary stopgap" to give the federal and provincial governments time to devise a water policy and pricing strategy before opening up the resource to bidders. Terence Corcoran, business editor of Toronto's *National Post* said, "Canada is a future OPEC of water."

According to the *Wall Street Journal*, a private

market for acquiring, storing and shipping water is emerging. The market "remains in its infancy, but already shows glimmers of what it could become" with the recent acquisition of Palm Springs, CA-based *US Filter* by France's *Vivendi SA*, a communications and utility group, for \$6.2 billion. *US Filter*'s main operations are in municipal and industrial water treatment, but it holds the rights to southern California farmland with Colorado River water claims. *US Filter* hopes to recycle and conserve water used on fields, and use any surplus for sales to local irrigation districts and municipalities. *US Filter* is the largest private water company in the US, and *Vivendi* Chair Jean-Marie Messier said the two companies "share a vision of a full-service global water enterprise". The deal should "catapult *Vivendi* into a dominant position in a highly fragmented but huge market" for water services, reports the *Financial Times*.

Meanwhile, "in a precedent-setting deal," a Canadian company "has quietly won the first North American license to ship bulk quantities of drinking water to China -- from a pristine lake in the US." Vancouver, BC-based *Global Water Corporation* plans to ship 18.2 billion gallons a year from Blue Lake near Sitka, AK, to bottling plants in China.

Within the U.S. "a fragile peace between New Mexico and Texas was shaken" in early March by news that El Paso water officials "have rounded up millions ... to battle New Mexico" for the rights to Rio Grande water. At issue are ownership and use of Rio Grande water stored at Elephant Butte, New Mexico's largest reservoir. The two states and a Washington, DC-based mediator are negotiating allotments for irrigation districts in an effort to resolve a lawsuit the federal government filed in 7/97 claiming federal ownership of Elephant Butte water. When Texas lawmakers "tentatively agreed to appropriate \$4 million for litigation" in case the negotiations fail, New Mexico water officials "reacted with shock and anger." At least one New Mexico irrigation district "vowed it would cease cooperating" in the talks.

Meanwhile, Interior Secretary Bruce Babbitt has given Western states six months to set rules for handling annual surpluses of Colorado River water in a move that may allow the states to avoid a federal dictate on the matter. "By letting the states hash it out, southern California could keep its aqueduct full to satisfy farmers and ranchers." A draft agreement by Nevada, Wyoming, Utah, New

Mexico, Colorado and Arizona would give "equal treatment" to southern California and Las Vegas in surplus water years. By taking unused water from other states, California anticipates that by 2015 it will reduce its annual take from the Colorado River by more than 200,000 acre feet. Babbitt has warned California that it must reduce its use of the river's water

For a state like Utah, leasing unused water to California "would be a cash cow." The state could see an annual injection of \$60 million by leasing 400,000 acre feet to California. Utah Speaker of the House Mel Brown (R) said funds from anticipated water leases are "very much needed" to pay for mitigation of endangered species lost to water projects. But the *Southwest Center for Biological Diversity* (SWCBD) criticized Babbitt's plan to let the states bargain over unused Colorado River water, saying "any shift in the river's use" should be used to help restore wildlife habitat in the Colorado River Delta at the Gulf of California. For the same reasons, the SWCBD also blasted a recently announced deal among California agricultural users that Babbitt supports because it sets the stage for an agriculture-to-urban water market.

"Highlighting the dangers of wasting water" as a matter of "human survival," the UN and many governments around the world on 3/21 observed *World Water Day*. The theme of this year's event was "Everybody Lives Downstream" to emphasize that problems in one region can affect people even great distances away.

Sources: Stephen Collinson, *Agence France-Presse*, 2/7/99; UNESCO release; Stephen Kinzer, *New York Times*, 2/28/99; Colin Nickerson, *Boston Globe*, 3/4/99; Anthony DePalma, *New York Times*, 3/7/99; Rick Wartzman, *Wall Street Journal*, 3/23/99; Owen/Waters, *Financial Times*, 3/23/99; Mike Taucher, *Albuquerque Journal*, 3/6/99; Mary Manning, *Las Vegas Sun*, 12/18/99; Brent Israelson, *Salt Lake Tribune*, 12/20/99; *UN Daily Highlights*, 3/22/99; National Journal's *GREENWIRE*, *The Environmental News Daily*, 11/12, 12/18, 12/21/1/7, 2/8, 2/13/1, 3/4, 3/8, 3/9 and 3/23/99

21st Century Water Policy

Last June, the *Western Water Policy Review Advisory Commission* (WWPRAC) published "*Water in the West: The Challenge for the Next Century*". It may be the most far-sighted federal study of Western

water since John Wesley Powell's visionary *Report on the Lands of the Arid Region of the United States*, published in 1878. The WWPRAC report is more than a water study. It is a mission statement and a wake-up call, and it puts a new spin on Western water. It identifies contemporary water problems, highlights troublesome trends, such as rapid urban growth, challenges the status quo, and replaces sentiment and myth with science.

If made into legislation, *Water in the West* would:

- restore aquatic ecosystems,
- find new uses for dams,
- free up more water for cities through water markets,
- realign federal programs along watershed boundaries,
- restore water to Indian reservations,
- encourage more efficient use of agricultural water and
- bring more local voice to federal water management.

Separated by 120 years, *Water in the West* and Powell's *Lands of the Arid Region* report share the same "North Star": sustainable water use. However while Powell focused on economic development, *Water in the West* focuses on a broader universe and recognizes new and long-overlooked issues, including recreation, environmental protection and, through Native American claims, religion.

The WWPRAC was created by Congress in 1992 to review federal activities in Western states which affect the allocation and use of water resources. It was composed of a powerful 22 member group – including the secretaries of the Interior and Army and 12 ex-officio members of Congress. The nucleus of the "brain trust" was made up of eight citizen members – three water-law professors, two water lawyers, a rancher, an Indian lawyer and the deputy administrator of the Bonneville Power Administration – an all volunteer group appointed by President Clinton. The report is meant to influence legislation and to help Congress shape ideas and see new ways of doing business.

It includes scores of factual gems – nuggets you can extract and put to your own use. "You can take them to cocktail parties, impress and depress your friends at the same time. You can even make a customized Harper's Index of Western water":

- Percent of U.S. hydropower generated by Western rivers (70);
- Percent of Western water used by farmers

(78):

- Percent of Western water used by domestic and commercial users (10);
- Number of native Western fish species that have gone extinct this century (22);
- Number of native Western fish now threatened, endangered or of special concern (more than 100);
- Percent of U.S. reservoir capacity in the 17 Western states (67.6);
- Five fastest-growing states in the U.S. (Nevada, Idaho, Arizona, Colorado, Utah).

But the study's most important contribution is its broad-brush look at Western water and what can be done to manage it more wisely:

Groundwater: "Achieving sustainable groundwater use is one of the major challenges facing the West.... The U.S. Geological Survey projects severe depletions in the High Plains region by the year 2020.... State laws commonly allow groundwater overdraft – the depletion of an aquifer at a rate faster than the natural rate of discharge."

Drought: "We continue to treat drought as an emergency rather than a systemic risk in arid areas.... We must realize drought is a recurrent feature of the climate of the West.... As the demand for relatively fixed water supplies increases, future droughts can be expected to produce greater impacts."

Urban Growth: "For the past 15 years, the West has been experiencing the most dramatic demographic changes for any region or period in the country's history. Should present trends continue, by 2020, population in the West may increase by more than 30 percent. The West is rapidly becoming a series of urban archipelagos (e.g. Denver, Salt Lake, Boise, Missoula, Portland, Phoenix, Albuquerque, Dallas, Houston and Seattle) arrayed across a mostly arid landscape...." Nationally, per capita water use is about 40 gallons of water daily; in the desert Southwest (where residents use a large part of their urban water supplies to water lawns and gardens), the average per capita daily use is three times as high and the per capita use for Las Vegas and Phoenix is over 300 gallons per day."

Floods: "Characterizing floods as natural disasters has made it difficult to recognize the need for periodic inundations on some

river systems to maintain their historic natural productivity and their riparian zones.... Water and land management policies have increased the magnitude of floods and settlement of flood plains and thus the amount of flood damages. In addition, floodplain management programs have not succeeded in mitigating flood losses in most situations. Multiple-purpose dams have often increased downstream flooding by diminishing the channels' capacity to pass floods.... For example, Elephant Butte Dam on the Rio Grande in New Mexico has increased flooding in El Paso by reducing flushing of the stream channel downstream. Sediment from bank scouring has combined with sediment loads from undammed tributaries to raise the (river) bed level downstream. The net result is that even though Elephant Butte Dam has reduced pre-dam flows at El Paso by as much as 75 percent, small floods can do a great deal of damage."



Aquatic Species: "At least 40 kinds of North American freshwater species have suffered extinction in the last century, more than half this total in arid lands west of the Continental Divide. It must be recognized that native biota are sentinels of ecological change. Reductions in their abundance signal the beginning of ecosystem deterioration and disappearances of sensitive species demonstrate major shifts in an ecosystem that may often precede its collapse."

Pollution: "Despite progress in the quality of Western water, significant problems remain.... Among the most serious unregulated forms of water pollution is that generated by irrigated agriculture and drainage districts. Irrigation return flows can, in certain situations, contain toxic constituents as well as salts, pesticides and fertilizers.... Western irrigated cropland accounts for 89 percent of quality-impaired river mileage and irrigated agriculture accounts for more than 40 percent of the pollution in impaired lakes. Irrigation return flows are the most common source of

pollution in national wildlife refuges."

Science: "Water resources management has generally been supported by good science, but the research missions of government agencies are not well adapted to produce the science needed to make informed aquatic restoration decisions. Too often, we spend millions of dollars on science that cannot be applied to make the necessary regulatory decisions. The Sacramento-San Joaquin River Basin Study reported a familiar problem: Millions of dollars have been spent on numerous projects that study elements of the ecosystem, but the research has not been integrated. Thus, scientists cannot answer questions that are basic to making sustainable use decisions.... We need more focused and integrated research."

Dams: "Many dams are now providing benefits to a much broader range of interests than was originally envisioned.... Many structures are getting older and must be the focus of significant maintenance decisions. The issue of maintenance is critical given the declining federal budget."

Indian Water Rights: "The federal government needs to fulfill its trust responsibilities to Indian tribes and nations to secure tribal water rights and assist the nations and tribes in putting those rights to use. Federal contributions toward meeting these obligations should not be limited to potential federal liability for breach of trust, but should recognize a moral and legal obligation to protect and assist the tribes. The federal government should recognize that it has often failed to protect prior and paramount Indian water rights while encouraging and financing non-Indian water development."

However, spotlighting these problems is one thing – fixing them is another. *Water in the West* proposes an entire drug store of remedies, from the expansion of water marketing – the voluntary sale of water, usually from agriculture to urban areas – to the use of federal dams to heal downstream ecosystems. "Dams have a great potential to contribute to ecosystem restoration because they are a source of altered flows and, where power is generated, restoration funds," the report says.

Water in the West also suggests that we borrow a page from John Wesley Powell and shape and integrate federal agencies, programs and budgets along hydrological

boundaries. The concept failed in the 1870s and faces opposition today. But in ways that are as mysterious as water, governance by large river-basin unit is taking hold anyway. You can see it in the multi-agency restoration efforts in the Sacramento-San Joaquin River Delta in California, along the Platte River in Colorado, Wyoming and Nebraska, the Truckee River in California and Nevada and the Columbia River in the Northwest.

The idea has drawn howls of protest from critics who see it as a federal intrusion into state water law and administration. But Denise Fort, a member of the *National Research Council's Water, Science and Technology Board*, disagrees. "We're not talking about broader federal powers," she said. "What we're attempting to do is address the complaint, which was voiced so often, of too many federal agencies that are ill-coordinated and sometimes contradictory. If that's the problem, the answer is to bring them together in some visible setting where they have to coordinate."

You can see democracy bubbling up, too, challenging the oligarchy of traditional water use, the monopoly of state and federal decision-making. The *Henry's Fork Watershed Council* in Idaho and the *Walker Lake Working Group* in Nevada are two of many examples. There are more players at the table. There are trout fishermen, river rafters, university professors, stream restoration specialists, Indian tribes, booming Western cities-as well as farmers, power companies and engineers. By proxy, there are razorback suckers, cutthroat trout, cottonwood trees, and whole aquatic ecosystems at the table. And everyone, everything, is thirsty. *Water in the West* has looked at this and pronounced it good.

"To accept local participation is not simply to engage in a democratic exercise," the report says, "but to recognize the need for sustainable local economies and energetic stakeholder consensus to replace frustration and dissension.... From the bottom up, the new federal challenge will be to effectively participate with local stakeholders through watershed groups and watershed councils."

But as the number of players increases, the stakes get higher. Decisions get tougher. Selling agricultural water to cities means drying up some farms, shrinking rural economies. Sending Colorado water to Nebraska for sandhill cranes means less water for Colorado squawfish. Deregulating the utility industry means less money for

hydropower-and less environmental mitigation. *Water in the West* recognizes this, too. But alas, it has no miracle cure.

The sobering truth is that no panacea exists, the report says. Rapidly growing demands on Western water resources continue to pose a formidable challenge to our capacity for institutional change: "There will be fewer truly win-win solutions in the future. Instead, we seek solutions that equitably share the burden and minimize social disruption."

Copies of *Water in the West: The Challenge for the Next Century*, along with 22 research reports, are available at the WWPRAC Web Site: <http://www.den.doi.gov/wwprac>. Printed copies are available from the WWPRAC office at (303) 445-2100.

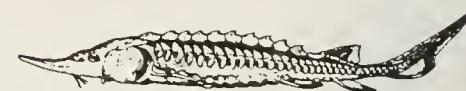
Source: By line article (paraphrased) by Tom Knudson, *High Country News*, Vol. 30, No. 12, 6/22/98 (Tom Knudson is a two-time Pulitzer Prize winning journalist, western water user and special assistant to U.S. Secretary of Interior Bruce Babbitt. The opinions expressed in this article are his own.)

Young Pallid Sturgeon Collected

The pallid sturgeon, *Scaphirhynchus albus*, inhabits open channels in large, turbid rivers. It occurs in the Missouri River and the Mississippi River below the mouth of the Missouri River. In these rivers, pallid sturgeon live on the bottom in strong current, but may also be found along sand bars and in deep scour holes along wing dams. The species was designated as Federally endangered in October, 1990 because its survival was jeopardized by over-fishing, habitat destruction, and hybridization. Young-of-the-year (Y-O-Y) pallid sturgeon were not documented from the wild until last summer.

On 24 July 1998, a Y-O-Y pallid sturgeon, measuring 79 mm, fork length, was collected in an experimental trawl from the Mississippi River at river mile 49.5L, approximately 2.5 miles south of Cape Girardeau, Cape Girardeau County, Missouri. The experimental trawl used is a modification of the standard Upper Mississippi River Long Term Resource Monitoring Program (LTRMP) slingshot balloon trawl. It is 4.8 m wide x 4.5 m long with 18 mm mesh (16 feet x 15 feet with 3/4-inch mesh). A 4-mm (3/16-inch) delta style mesh was attached to the outside of this net to more

effectively capture small fish, particularly *Macrhybopsis* chubs. A standard trawl sample is 350 meters (1,148 feet) long.



"larval sturgeon"

The pallid sturgeon was collected over primarily a sand substrate; some gravel was present. Bottom dunes to 31 cm high were recorded at the sample site. The water averaged 2.7 m deep and the bottom water velocity averaged 0.55 m/s. Surface water velocity averaged 1.07 m/s. Water temperature was 29.6 °C.

The collection site is classified as main channel border-unstructured strata (no revetment or wing dams) and was located on an inside bend. Typically, inside bends in the Mississippi River near Cape Girardeau have large sand flats with a point bar at the downstream end. Sand dunes occurring in these areas range from 15 cm to 1.2 m high. Substrate types were determined by dragging a metal pole on the bottom. Substrate firmness could be estimated as the pole ascended and descended a dune. In general, the substrate was soft to firm sand when ascending a dune and firm sand or cobble/gravel in the trough below the dune. It is not known whether the pallid sturgeon was captured on or below a dune or in some interstitial space between dunes.

Forty-six fish were captured along with the pallid sturgeon at the collection site. Species composition was 52% channel catfish (*Ictalurus punctatus*), 32% blue catfish (*Ictalurus furcatus*), 9% unidentified sturgeon, 2% gizzard shad (*Dorosoma cepedianum*), and 2% sicklefin chub (*Macrhybopsis meeki*). Three of the four unidentified sturgeon were 100-150 mm long (these were probably Y-O-Y); the other was 258 mm long (probably age-1). All of the other species captured were Y-O-Y.

One hundred and five sites were sampled with the experimental trawl in 1998. Nineteen samples produced 32 unidentified sturgeon that were less than 258 mm long; 28 were less than 150 mm long. Twelve of the 19 samples (63%) occurred at inside bends and 20 of the 32 unidentified sturgeon were captured in inside bends (62%). This suggests that Y-O-Y sturgeon may be using inside bends as rearing habitat from June through October. More research is needed to determine sturgeon distribution through-

out the seasons and over its entire historical range.

The Y-O-Y pallid sturgeon collected was killed during the trawl sample, probably the result of trauma. The specimen has been preserved and is in ichthyological collections at the *University of Alabama*. Bobby Reed (Louisiana Department of Wildlife and Fisheries), an active member of the Louisiana Pallid Sturgeon Recovery Team, made the initial verification of the voucherized specimen. The specimen was also verified by Dr. Richard Mayden (*University of Alabama*).

For additional information contact: Mike Petersen and David Herzog, Missouri Department of Conservation, Fisheries Research, Assessment, and Monitoring Section, Long Term Resource Monitoring Program, Open River Field Station, 3815 East Jackson Boulevard, Jackson, MO 63755, (573) 243-2659.

FWS Caviar ID Method Criticized

The last issue of *River Crossings* noted that methods are being developed by scientists to use DNA "fingerprinting" to help investigators track harvested sturgeon eggs (for individual species) from source to market in order to detect poaching. Scientists cannot rely on sight alone because traders market caviar in only three major categories – *beluga*, *sevruga*, and *osetra* (or Russian) – distinguished by egg size. Certain species tend to produce eggs of a given size and are traditionally marketed in a given category.

Dr. Vadim J. Birstein (*The Sturgeon Society*) and his colleagues have developed DNA tests which identify DNA sequences unique to certain sturgeon species. They offered this test to the U.S. Fish and Wildlife Service (FWS) for use in monitoring U.S. imports for compliance with new *Convention on International Trade in Endangered Species of Wild Fauna and Flora* (CITES) rules. However, when Birstein and his colleagues asked the FWS to pay royalties for use of the technique's patented parts, FWS officials instead opted to develop their own test, which is based on sequencing one section of DNA common to all sturgeon species. According to Dr. Kenneth W. Goddard, director of the FWS Forensics Lab, the agency wanted a tool it could share with enforcement agencies in other nations without bothering with royalty fees.

In response to the *River Crossings* article,

Dr. Birstein sent MICRA an email message criticizing the FWS technique. Included with his message was a copy of a letter of criticism written to John M. Sellar, Acting Head of the CITES Enforcement Assistant Unit. Dr. Birstein's criticisms follow (paraphrased in part for brevity):

- The FWS did not (and still does not) have enough tissue samples for development of its own DNA identification method -- even for the three commercial sturgeon species. All FWS tissue samples (i.e. 5 *beluga*, 11 *osetra*, and 8 *sevruga* individuals only) are of unknown origin without any indication of population or subspecies. FWS samples were obtained between January and April 1998, while FWS announced in August 1997 that it had developed its own DNA caviar identification method (Fact Sheet Series, 08/97, p. 3). The three main caviar producing species, *beluga* (*Huso huso*), *sevruga* (*Acipenser stellatus*), and the Russian sturgeon or *osetra* (*A. gueldenstaedtii*) live in three different basins (the Caspian, Black, and Azov seas), where they are represented by a number of populations (or subspecies) each. Any method of caviar identification should be tested with tissue samples from several (10-20) individuals from each of the sea stocks.

- Creation of the FWS DNA method violated elementary scientific ethics by using Dr. Birstein's unpublished data (partial cytochrome b gene sequences of sturgeons) without his knowledge and permission. Dr. Birstein said that FWS officials were aware that these data were a part of materials submitted for patenting in the USA and Europe, but they used the unpublished materials anyway.

- The FWS method of sequence analysis is subjective and not based on and/or supported by results of a scientific study. Without any experimental data FWS declared that there is intra-species variation in all sturgeon species in any two of 28 nucleotide positions that were subjectively chosen for caviar species identification within the 270-nucleotide region of the cytochrome b gene which were sequenced.

- FWS laboratory reports, which Birnstein accessed as an expert witness in a case against the FWS, described caviar samples taken from a certain shipment as "most similar to Russian sturgeon" and "most similar to ship sturgeon". Birnstein says that the term "most similar" is not scientifically acceptable when one uses DNA

sequences for species identification.

- Scientifically, it is not possible to use a short part of the cytochrome b gene for the identification of all sturgeon species or at least all potentially caviar producing sturgeon species as the FWS claims. There are no species-specific nucleotide sites in this region for many of the sturgeon species. Using this approach, only two of the three main caviar producing species – *beluga* and *sevruga* – can be identified. The third – *osetra* – cannot be discriminated from three other potentially caviar producing species.

- The FWS DNA method is very expensive, requiring the use of expensive equipment (a DNA automated sequencer). Because of this equipment's high cost, the FWS can make only random analyses of caviar shipments and is testing only one, rarely two eggs. This method cannot be introduced in caviar exporting countries such as Russia and Romania with their current economic problems since it is impossible for them to obtain and use expensive equipment.



Paddlefish eggs, such as these, are also being mixed with, and used as a surrogate for sturgeon eggs in today's caviar markets.

- The FWS method has not been published in any professional journal or reviewed by any independent professional molecular genetics expert. The use of the FWS DNA method for law enforcement before approval by the scientific community contradicts principles used in science for hundreds of years.

- The current FWS practice of caviar shipment seizures based on the analysis of one egg from the whole shipment (sometimes more than 1 ton of caviar) has no effect or impact on sturgeons in the wild, which should be the ultimate goal of the CITES, i.e. conservation of species. If a dishonest Russian supplier loses his unfortunate honest American partner (whose shipment has been confiscated by the FWS), he has an opportunity to send his next mislabeled shipment to Europe where no

country is conducting DNA tests. This form of the CITES implementation can result only in destruction of the caviar business (which is carried out by small businessmen) in the United States without any effect on stocks of the endangered sturgeon species in the former Soviet Union, Europe or China.

Dr. Birnstein has authored more than 100 scientific publications and several monographs – 25 are on the molecular phylogeny, taxonomy, and conservation biology of sturgeons. As noted earlier, he is also co-author of the DNA method of caviar species identification (i.e. *beluga*, *sevruga*, and *osetra*). The Birnstein et. al. method has been published in *Nature* and *Conservation Biology*, patented in the United States and is presently being patented in the European Union. The American patent has been assigned to the *American Museum of Natural History* (New York), and the European patent, to the *Karl-Schmitz-Scholl-Fonds for Environmental Law and Policy* (Bonn, Germany). Dr. Birnstein describes his (Birnstein et. al.) DNA method as simple, precise, very cheap (it does not include DNA sequencing), and can be introduced in any caviar producing country, including Russia and Romania.

Birnstein says that the question of the DNA method used is crucial for caviar species identification. A particular sturgeon species egg can be scientifically identified only through a DNA study, not visually or through measuring egg size. Dr. Birnstein is convinced that there is no need to identify all sturgeon species for the CITES implementation. Scientifically, he says, it is not possible to create a simple and cheap DNA method for species identification of all sturgeon species. For the CITES implementation, he says, it is enough to check labeling of caviar from the main three commercial species (*beluga*, *osetra*, and *sevruga*) and to confiscate all mislabeled parts of caviar shipments. This type of control will introduce strong monitoring of the caviar trade in the main commercial sturgeon species, and cut off the use of the other Eurasian sturgeon species for caviar production.

Birnstein says that professional conservation biologists already have a serious problem with the CITES implementation: a lack of an exemption in the CITES rules for fixed tissue samples for the DNA research and other types of scientific specimens creates a constant problem for many international scientific studies. Birnstein predicts even more profound polarization of professional

conservation biologists and CITES as an international body if the Secretariat does not follow the rules appropriate in science, but supports poorly scientifically based DNA methods developed by governmental structures (FWS) without any oversight by professional DNA conservation biology experts.

The last issue of *River Crossings* noted that of 95 lots of caviar, mostly purchased in New York City stores, Birnstein et. al. found that about 25% contained species of sturgeon different from those that buyers would expect. These included three lots of *beluga*, which can fetch prices of \$90 an ounce. However, after examining 105 caviar samples purchased on the East and West Coasts, FWS scientists, using the FWS DNA testing method, suggests that only about 3% of the lots are mislabeled.

Witt Assails Floodplain Building

The man in charge of preparing the nation for the next natural disaster has a few critical words for what's happening along the Missouri River in Saint Louis County. James Lee Witt, head of the Federal Emergency Management Agency, noted the wave of development in Chesterfield Valley, where business owners are banking that an improved levee will protect them from future floods.

"If it's man-made," Witt said, "nature can wipe it out." Witt was at Lambert Field last month en route to a visit in Cape Girardeau. At Cape, he will name that city as Missouri's first Project Impact community. The program recognizes communities that take steps to protect themselves before a disaster hits. Cape also is improving its levee, but that is to protect the town that is already there.

In Chesterfield, and neighboring Maryland Heights, levees are being improved to lure development where before there had been farm fields. The federal government has been doing just the opposite. Millions have been spent to buy out floodplain buildings that are subject to repeated disasters. Witt noted that of more than 10,000 properties purchased for nearly \$100 million, nearly half of the them were in Missouri.

Witt is pushing for changes that will make it harder for home and business owners to file repeat damage claims under the federal flood insurance program. The problem, Witt said, is that so-called 500-year levees are not guaranteed against catastrophe. "You may get 10 years, you might get 20," he said. "I'm not saying Chesterfield shouldn't build there, but

they'd better know the risk."

Witt said predicting future flood levels is difficult because of development in a river's entire watershed. More roofs, parking lots, streets, even farm fields means more water runs off with each rain.

Sources: Tom Uhlenbrock, *Saint Louis Post-Dispatch* Writer and *Missouri Monitor*, March 1999

Navigation Economics Model Revisited

A sophisticated new economics model is expected to give the Upper Mississippi River Navigation Economics Study Team more precise answers, but it will also require collection of more detailed data. Economists have learned that the economic decisions made by shippers could be more complicated - and varied - than assumed in previous Corps of Engineers studies.

The Upper Mississippi River Navigation Study's determination of the National Economic Development Plan -- or the combination of improvements that maximizes net economic benefits consistent with protecting the nation's environment -- was basically put on hold last summer for a technical review of the economic models. Preliminary results raised concerns for study officials because they varied significantly from outputs of traditional Corps models.

Experts who conducted the "quality control" check found the model was sound. However, its outputs can be extremely sensitive to the economic assumptions being used--particularly to the concept of elasticity, or the impact of a price change on demand for river transportation, said Rich Manguno, a New Orleans District economist now heading the study's economic evaluation. If shippers keep moving goods on the river despite a price increase, the product is considered to be inelastic, while a product would be elastic if shippers sent their product to alternative markets given even a small increase in the cost of river transportation.

Some have accused the Corps of delaying the study to develop a recommendation that favors construction of new locks and dams. In fact, many of the economic assumptions examined with the new model make construction appear to be a less favorable alternative than it would be using traditional Corps models, Manguno said. If you

assume that demand for river transportation is totally inelastic -- the assumption made in previous studies -- then navigation improvements like lock construction are economically justified more quickly than they would be assuming more elasticity or responsiveness to price he said.

Early this year, a private contractor began compiling actual data to help determine the relative elasticity of various commodities that are carried on the Mississippi, including grain, coal, petroleum, industrial chemicals, iron and steel. The contractor's efforts will ultimately allow the study to estimate how much of a given commodity is shipped via the waterway at a given price. "What we're after is, as congestion starts to build on the waterway, what kind of response can we expect in the shipments of corn and other commodities relative to the increase in price they face," Manguno said. In previous Corps' studies, economists assumed all traffic would remain on the river until it could be shipped to the same point more cheaply through another means, like rail, he said.

"Now we're saying that, especially with grain, it's wrong to assume that the only other option is to put it on rail and ship it to New Orleans. What we're saying is there are other things that come into the picture as well. They could ship it to a feedlot, or crush it and turn it into corn oil or another product. The seller of the grain is not interested in where it goes. What he's really interested in is maximizing what he can get for it. We're trying to get to the nature of the willingness of an individual to pay for water transportation."

In August, the Corps held an expert elicitation meeting, bringing together four of the nation's top experts on grain transportation to glean more information on the demand issue. Their conclusion, meeting facilitator Paul Soyke said, was that the Corps needed more data, and that is what has prompted the additional research effort. Some of what they did suggest, however, was:

- Elasticity is to some degree a function of geography. The closer to the river, the more advantage there is to putting goods on the river, and therefore the more inelastic, or inflexible the decision;
- Grain is relatively elastic, given its many alternative markets;
- Events in the future could have a significant impact on the shape of the model's demand curves, and the assumptions made in the model requires an understanding of a

variety of world markets and conditions.

Information gained from the contractor, study states and other experts will help the Corps determine the most accurate set of economic assumptions to use in developing a preferred improvement plan. The model has been run given a variety of scenarios, and answers have varied dramatically, Manguno said. If you assume demand is totally inelastic, as the Corps has done historically, the preliminary analysis indicates construction of new locks to be justified immediately. If you assume somewhat more elastic demand, coupled with projections of traffic near the high end of the Corps forecasts then the economic justification of locks is pushed out 20 years or more - and even further assuming greater levels of elasticity or lower traffic levels.

Manguno cautions against making any study conclusions before the correct economic assumptions are determined, though. Environmental costs, not yet determined for the system, also could be a major factor in the economic equation. "I'm unwilling to say we know everything with certainty," he said. "I don't think we do yet."

Source: U.S. Army, Corps of Engineers, *UMR-IWW System Navigation Study Newsletter*, January 1999

Ag Waste Update

In early March VP Al Gore announced a federal plan to limit pollution from agricultural waste by "bringing to bear the full weight of the Clean Water Act on meat producers". Under the plan, a joint initiative by the US EPA and the Agriculture Dept., large cattle, pig and poultry growers will be viewed as potential polluters. Control of manure and runoff from farms will be monitored at a level of scrutiny previously reserved for industrial waste. The plan, which will go into effect in 2002, will apply state or federal permitting rules to about 18,000 major hog, cattle, dairy and poultry producers nationwide.

Standards will be established requiring operations with more than 1,000 beef cattle, 100,000 chickens or 2,500 hogs to develop waste management plans and obtain state permits by 2003, with a goal of having all growers in voluntary compliance by 2009. If states do not create their own programs, the US EPA could do it for them under the Clean Water Act. Gore also announced an

additional \$260 million over two years for states to control pollution from farm runoff. States will also be given the option of singling out their most nutrient-damaged waterways and requiring growers in those areas to get permits, regardless of their size.

The most controversial element of the plan is a requirement that states hold major meat producers responsible for the manure their animals produce, even if the animals are raised by independent farmers. The effort is the first time that both companies and growers will share liability for any legal consequences arising from disposal violations. The industry generally opposes being "legally responsible for the fate" of the 1.4 billion tons of animal waste produced annually. *American Farm Bureau Federation* (AFBF) Pres. Dean Kleckner said the administration should use incentives to target areas where problems exist instead of "throwing a costly regulatory blanket over the countryside". Environmentalists praised the plan, but criticized the fact that the plan does nothing for the short term. Poultry companies were "irate." Richard Lobb of the *National Chicken Council* said, "It is inappropriate for the EPA to jump in". The *National Cattlemen's Beef Assn.* (NCBA) said the Dept. of Agriculture and the EPA "have made improvements to their animal feeding operation strategy," but they still have "significant concerns" about "one size fits all" regulations. However, the *National Pork Producers Council* (NPPC) said it supports the initiative, which mirrors the commitments pork producers made in 1997

In **Georgia** the Environmental Protection Division (EPD) on 1/27 imposed a moratorium on permits for factory hog farms until new regulations are implemented. EPD Director Harold Reheis's decision came after the Board of Natural Resources "strongly" endorsed the action to prevent water pollution from farms. The moratorium on farms exceeding 1,000 pigs is expected to last until 6/99 or until the EPD finishes new rules to limit pollution from hog farms.

Maryland's Upper Eastern Shore is potentially facing the same environmental problems that have shown up at Lower Eastern Shore waterways because of an increase in area poultry farming since 1992, according to a new federal farm census. Area farmers say economic necessity has forced them to take up poultry farming and work under contract for the Delmarva Peninsula's large poultry companies. It a

move aimed at changing the relationship between chicken growers and large corporations, the *Chesapeake Bay Foundation* plans to form a cooperative of Eastern Shore poultry farmers as an alternative to the processing companies. Though known for more environmentally oriented projects, the foundation has pursued alternative agricultural efforts as a means of promoting better stewardship of the land. Meanwhile, Maryland is poised to become the first state to place the burden of manure disposal on poultry companies by "tying a company's state operating permit to its success at preventing manure from washing into waterways." Currently, farmers who work under contract for the poultry companies are responsible for the disposal of chicken manure. The new provision would shift the responsibility to the companies. The industry "fiercely opposes" the provision and says voluntary efforts, not "punitive" measures, should be pursued. But environmentalists and federal regulators applaud the move, saying it will help protect waterways such as the Chesapeake Bay. Maryland last year became the first state to limit the amount of chicken manure farmers may spread as fertilizer.

Delaware must quickly reduce its poultry pollution by strengthening its "lax" environmental regulations or the US EPA will intervene. Recent poultry-waste controls in Maryland, Virginia and Pennsylvania make Delaware's "inattention" to the problem "more glaring." Delaware was not party to an agreement among the three other states nearly a decade ago to reduce nutrient pollution in the Chesapeake Bay by 40%. Delaware is home to upstream portions of many of the Eastern Shore rivers that are struggling with polluted runoff. The problem is most apparent on the Nanticoke River, which has about 66% of its drainage basin in Sussex County, DE, the U.S.'s leading poultry-producing county. Waste from the 200 million chickens has been linked to polluted drinking water and harmful algae blooms. Court orders requiring Delaware to set nutrient-reduction goals for its waterways set no deadline.

However, EPA Region II Administrator W. Michael McCabe says if the state does not pass significant reforms this year, the agency will step in. Meanwhile, *Perdue Farms Inc.* and Salisbury, MD-based *Eastern Shore Forest Products* (ESFP) in mid March each said they

would build factories to convert chicken waste into commercial fertilizer. *Perdue* plans to build a facility that will use 120,000 tons of waste each year, and it said it would consider using any profit for environmental projects. ESFP is seeking permits to build a factory in Princess Anne, MD, and hopes to build a plant in Delaware as well. Delaware Gov. Thomas Carper (D) is proposing \$2.3 million in funding for conservation programs to help farmers build manure sheds to control runoff. Meanwhile, "nervous farmers" spread tons of chicken manure on their Delaware fields after *Delmarva Poultry Industry Inc.* (DPI) warned them of an impending "crackdown" by the US EPA. A 12/98 letter from DPI to more than 2,000 chicken farmers said manure not "properly covered" would draw EPA citations, and some farmers responded by hiding the manure or spreading it on their farms.

Alabama's Environmental Management Commission on 2/16 approved regulations for management of animal waste that will cover about 4,000 large livestock operations. The rules, which took effect on 4/1, established buffer zones of 1,320 feet between liquid waste facilities and the nearest house, school, church or hospital and 330 feet between dry waste facilities and the nearest structure. Farmers also must demonstrate they are managing waste properly. Although environmentalists and farmers expressed mixed reactions, neither group is expected to challenge the rules, says Steven Jenkins of the Alabama Dept. of Environmental Management.

Seaboard Farms Inc., Oklahoma's largest swine producer, should be allowed to operate a 25,000-hog facility adjacent to a wildlife refuge, according to a ruling by Judge John Patterson on 3/1. The application to open the farm was opposed by neighbors and environmental, farming and hunting groups, including the *Oklahoma Sierra Club* and the *Oklahoma Wildlife Federation* (OWF), on grounds that the farm would not be able to properly manage its manure. And a state Dept. of Wildlife official said he feared that odor from the

farm would interfere with public use of the adjacent Beaver River Wildlife Management Area, which provides a home for pheasant, quail, deer, turkey, rabbits and beavers. OWF Pres. Paul Purser said, "To precariously position 25,000 hogs on a slope above some of the best public quail hunting in the state demonstrates that someone somewhere doesn't understand either the aesthetic or economic benefits our wildlife and outdoor recreation bring to Oklahoma." The state Board of Agriculture adopted Judge Patterson's decision with the stipulation that it find 640 acres for manure disposal. But opponents promise further legal action. The state attorney general's office said it will appeal the Agriculture Board's decision.

In Kansas, a bill passed by the state House on 2/26 would give the state's counties the power to place stricter standards on hog farming operations than required by the state. Legislation passed last year took away county commissioners' authority over hog operations.

The Iowa Environmental Protection Commission on 3/15 recommended tighter standards for earthen manure lagoons. The new standards, meant to prevent polluted runoff and lagoon leakage, are the result of months of debate over livestock-containment rules approved by the Legislature last year. The commission also recommended allowing commercial manure applicators the option of either passing a test or completing a class to obtain a license. The rules must now be approved by the Legislature's Administrative Rules Review Committee.

In South Dakota actor James Cromwell, who played Farmer Hoggett in the movie "Babe," is joining members of the Rosebud Sioux Indian Tribe to protest the placement of the "world's third-largest hog factory on tribal lands without adequate environmental and cultural impact studies." Tribe members met with Sen. Tom Daschle (D/SD) to discuss the *Bell Farms* facility and held a rally in Mellette County on land adjacent to the proposed factory.

Colorado pork producers and county officials are concerned that new waste regulations that take effect on 7/1 could drive the hog business out of Colorado. Producers say there is no way they will be able to comply with the standards approved by voters last fall.

The **Illinois Senate** unani-



mosely passed a bill requiring that new farms with more than 1,000 animals receive state Agriculture Dept. certification on eight requirements including environmental protection measures. The House is expected to pass the compromise legislation later this Spring.

The Nebraska Environmental Quality

Council has rejected two citizen's efforts to strengthen the state's livestock regulations. One would have required large farms to carry insurance to cover environmental cleanups, and the other would have prohibited spraying liquid waste from irrigation units.

U.S. District Judge Edward Shea in mid March ruled that dairies should be classified as concentrated animal feeding operations (CAFO) subject to tougher regulatory scrutiny. The ruling, stemming from a lawsuit filed by the *Community Assn. for Restoration of the Environment*, found the term CAFO applies not only to feeding pens but also to waste lagoons and fields sprayed with manure. Shea also said manure runoff is subject to the Clean Water Act.

Sources: Peter Goodman, *Washington Post* 3/9/99; Fesperman/Dewar, *Baltimore Sun* 3/9/99; H. Josef Hebert, *AP/San Francisco Chronicle/Examiner* online 3/9/99; Goodman, *Washington Post* 3/9/99; Oldham, *Little Rock Arkansas Democrat-Gazette* 3/9/99; Todd Spangler, *AP/Dover Delaware State News*, 3/10/99; Lambrecht, *St. Louis Post-Dispatch* 3/9 and 3/10/99; AFBF release, 3/9/99; NCBA release, 3/9/99; NPPC release, 3/9/99; AP 1/28/99; *Dover Delaware State News*, 1/29/99; Greg Layton, *Dover Delaware State News*, 2/18/99; Ashley Estes, *AP/Birmingham News* online, 2/17/99; Hinton/McNutt, *Oklahoma City Oklahoman*, 3/2/99; Mick Hinton, *Oklahoma City Daily Oklahoman*, 3/18/99; *USA Today*, 3/1 and 3/26/99; Peter Goodman, *Washington Post*, 3/19/99; Perry Beeman, *Des Moines Register*, 3/16/99; *Environmental Media Services* release, 3/17/99; Dewar/Roylance, *Baltimore Sun*, 3/21/99; Fesperman/Shatzkin, *Baltimore Sun*, 3/21/99; Dan Fesperman, *Baltimore Sun*, 3/20/99; Tom Horton, *Baltimore Sun*, 3/28/99; Greg Layton, *Dover Delaware State News*, 3/25/99; John Kennon, Lamar [CO] *Daily News/Denver Post*, 3/29/99; George Gunset, *Chicago Tribune*, 3/27/99; *AP/Portland Oregonian* online, 3/25/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 12/17, 2/18, 1/29, 3/3, 3/9, 3/10, 3/19, 3/22, 3/29/99

Miscellaneous River Issues

Alabama Sturgeon Listing: The U.S. Fish and Wildlife Service (FWS) on 3/23 proposed adding the Alabama sturgeon to the endangered species list, "risking the renewal of a political firestorm." A similar proposal in 1993 touched off an 18-month battle between the government and Alabama lawmakers, who argued that protection would shut down Alabama's waterways and cost the state billions of dollars in economic losses. The government eventually withdrew that proposal, saying the species may already be extinct. But since that time, fishers have caught at least six Alabama sturgeon. And recent studies by the FWS and the Army Corps of Engineers have concluded that listing the fish as endangered will not affect activities in the Alabama and Tombigbee rivers, said Sam Hamilton, FWS southeast regional director. But the FWS "is likely to be in for another fight." Bill Satterfield, who helped lead the fight against the 1993 listing said, "We don't think there's anything to gain by the listing re-proposal". Sources: Motoko Rich, *Wall Street Journal* [Southeast edition], 3/24/99; David Pace, *AP/Birmingham News online*, 3/24/99 and National Journal's GREENWIRE, *The Environmental News Daily*, 3/25/99

Lower Miss Gasoline Spill: A gasoline spill that closed a 21-mile stretch of the Mississippi River in Arabi, Louisiana has not damaged wildlife or the freshwater marsh fed by the Caernarvon Diversion, officials say. A 551-foot tanker carrying pyrolysis gasoline went out of control on 2/26 and hit two boats, two barges and a dock causing the spill. Sources: Karen Turni, *New Orleans Times-Picayune*, 3/2/99 and National Journal's GREENWIRE, *The Environmental News Daily*, 3/4/99

Fox River Cleanup: Cleaning up the PCB-contaminated Fox River could cost up to \$721 million and take as long as 10 years, according to Wisconsin Dept. of Natural Resources (DNR) studies released in February. But environmentalists said the effort would not do enough and called for a \$1 billion effort. DNR officials will hold public hearings before settling on a final cleanup strategy. Sources: Sandler/Vanden Brook, *Milwaukee Journal-Sentinel*, 2/26/99 and National Journal's GREENWIRE, *The Environmental News Daily*, 3/2/99

Oregon Streamside Easement Program: The World Wildlife Fund will pay \$25,000 to the Southern Oregon Land Conservancy for

a new streamside easement program on private forests within the Illinois watershed to eliminate logging, grazing, road building and other activities next to streams.

Sources: Mark Freeman, *Medford [OR] Mail Tribune*, 1/28/99 and National Journal's GREENWIRE, *The Environmental News Daily*, 2/5/99

Blackwater Canyon Endangered Species:

Allegheny Wood Products on 2/18 announced it had signed an agreement with the *Sierra Club* to protect endangered species in the Blackwater Canyon of West Virginia. *Allegheny Wood* said the *Sierra Club* promised to refrain from filing a lawsuit against the company in exchange for a company commitment to continue working with the U.S. Fish and Wildlife Service to address environmental concerns. Sources: Ken Ward, *Charleston [WV] Gazette*, 2/19/99 and National Journal's GREENWIRE, *The Environmental News Daily*, 2/24/99

Chippewa Indian Fishing Rights:

The Supreme Court in late March ruled that Chippewa Indians can fish and hunt on 13 million acres of public land in Minnesota without having to abide by state regulations limiting takings. An 1837 treaty with the federal government guaranteed the tribe's fishing and hunting rights in the area in exchange for relinquishing ownership of the land. Minnesota and a coalition of land-owners and counties challenged the treaty in court, saying it had expired. But in a 5-4 vote the court upheld the hunting and fishing rights. The decision "affirms a 1997 ruling by the 8th Circuit Court of Appeals that the rights are guaranteed to the bands under" the treaty. In Minnesota, the issue "has been hotly debated ... largely because of fears that tribal members would take too many fish from Lake Mille Lacs, one of the state's prime walleye lakes". Source: Dennis Lien, *St. Paul Pioneer-Press*, 3/25/99; Biskupic/Claiborne, *Washington Post*, 3/25/99; Steve Schultze, *Milwaukee Journal-Sentinel*; 3/25/99; National Journal's GREENWIRE, *The Environmental News Daily*, 3/25/99

Invasive Blue Catfish: Blue catfish may be responsible for declining numbers of American shad and blueback herring in Virginia's James River, say scientists from Virginia Commonwealth University (VCU). When the Virginia Dept. of Game and Inland Fisheries introduced catfish to the James River more than 20 years ago, no one thought about the possible consequences to native fish. The state Game Dept. is attempting a "major effort" to restore the

shad population by banning shad fishing and releasing millions of hatchery-reared shad fry into the James. The state also will open a fifth dam on the James this spring, allowing shad to swim more than 100 miles up the river to spawn. Future studies may follow to further the understanding of the "complicated" James River ecology.

Source: Lawrence Latane, *Richmond Times-Dispatch*, 2/16/99 and National Journal's GREENWIRE, *The Environmental News Daily*, 12/22/98 and 2/16/99

Upper Missouri River Riparian Forests:

At the urging of *American Rivers*, the Bureau of Land Management designated \$185,000 for a river forest project to help protect cottonwood trees from livestock grazing along a "wild and scenic" 150-mile stretch of the Missouri River. Cottonwoods can live 150 years and are the foundation of river forests, supporting a higher diversity of breeding birds than all other Western habitats combined. Sources: Clair Johnson, *Billings Gazette*, 2/10/98 and National Journal's GREENWIRE, *The Environmental News Daily*, 2/11/99



Tennessee River Diesel Spill: A ruptured pipeline on 2/10 caused 45,000 gallons of diesel fuel to spill into Fort Loudoun Lake. Atlanta-based *Colonial Pipeline Co.* said it had tested the pipeline "just a few days ago." *Colonial*, the nation's largest pipeline company, was the subject of a federal task force probe after a 1996 spill in **South Carolina** dumped more than 900,000 gallons of fuel oil into the Reedy River. Sources: Jamie Satterfield, *Knoxville News-Sentinel*, 2/11/99; Satterfield, *Knoxville News-Sentinel*, 2/12/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 2/12/99

Canadian River Decision: Landowners and state officials have asked the Texas

Supreme Court to determine if a stretch of the Canadian River in the Panhandle is officially a stream or a wide area of wilderness. The outcome could affect other drainage systems in the state where the natural flow of a stream has been dammed. Sources: Jim Vertuno, *San Antonio Express-News*, 2/11/99 and National Journal's GREENWIRE, *The Environmental News Daily*, 2/12/99

Black Warrior River Mining: A plan to mine coal 1,100 feet below the Black Warrior River in **Alabama** is raising environmental concerns. But *Drummond Coal*, which is proposing the work, says the project and the mining technology pose no threat. Sources: *USA Today*, 2/9/99 and National Journal's GREENWIRE, *The Environmental News Daily*, 2/11/99

Wisconsin Enviro Regs: In what may turn out to be a national model for future regulation, **Wisconsin** and the US EPA on 3/25 signed an agreement giving state environmental regulators new flexibility to work with individual businesses to jointly meet pollution-control goals. Under the deal, the first in the US, Wisconsin's Dept. of Natural Resources (DNR) over the next five years will be able to use a flexible regulatory approach with up to 10 businesses. Two manufacturers have already started the application process. In exchange for participating, the companies may face fewer DNR inspections and fewer reporting and permit requirements. State officials say the program will give the DNR the ability to resolve pollution issues on a case-by-case or company- by-company basis, instead of the current "one-size-fits-all" standards set by state and federal laws. But Keith Reopelle of *Wisconsin's Environmental Decade Inc.* say he is withholding judgement on the program until he is assured that it will not result in less environmental enforcement. Sources: Walters, *Milwaukee Journal-Sentinel*, 3/26/99; Sharon Theimer, *AP/St. Paul Pioneer-Press*, 3/26/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 3/26/99

Montana Water Quality Regs: US EPA officials in late January praised recent changes to **Montana**'s water-quality rules and promised to work with state lawmakers this session to address the EPA's concerns with the state's water program. The EPA in December ordered Montana to revise its water regs, which the agency says the state weakened in 1995. EPA Region VIII Administrator Jack McGraw told Gov. Marc Racicot (R) that most changes the state has

made recently to the program are acceptable. EPA official Bill Wuerthele is helping state lawmakers draft legislation to "fix" any remaining problems. Sources: Erin Billings, *Billings Gazette*, 1/29/99 and National Journal's GREENWIRE, *The Environmental News Daily*, 1/7 and 1/29/99

Crooked Creek Gravel Mining: In an effort to control the impacts of gravel mining on Crooked Creek, a special committee of the **Arkansas** Pollution Control and Ecology Commission on 3/16 asked the full department to study possible changes in mining and water quality regulations. The committee recommended providing for staged reclamation of mining lands; requiring larger buffers between mines and waterways; changing Crooked Creek's status to an "extraordinary resource waterway;" and shortening the time for which gravel mining permits are granted. Sources: Andrew Green, *Arkansas Democrat-Gazette*, 3/17/99 and National Journal's GREENWIRE, *The Environmental News Daily*, 3/18/99

Acid Rain: State and federal environmental agencies on 3/20 dumped 140 tons of limestone into the St. Mary's River in Augusta County, **Virginia** to combat the damage done by acid rain and restore the waterway as suitable trout habitat. Meanwhile, in **New York** an environmental group says the release of an acid rain report is being delayed because it shows that federal policies in the Adirondack Mountains are too lenient. The National Acid Precipitation Assessment Program was due to release the report to the public in 12/96. The report, ordered by Congress in 1990, concludes that acid rain deposit levels are increasing in sensitive areas despite lower sulfur dioxide and nitrogen oxide emissions from Midwest factories. *Adirondack Council* Executive Director Timothy Burke said the conclusions show that federal emissions standards are too easy to meet. More than 500 lakes and ponds in Adirondack Park are too acidic to support native life. Rep. John Sweeney (R-NY) has asked the General Accounting Office to investigate the delay in the release. Sources: Carlos Santos, *Richmond Times-Dispatch*, 3/21/99; Lawrence Latane, *Richmond Times-Dispatch*, 3/23/99; *AP/Boston Globe*, 3/4/99 and National Journal's GREENWIRE, *The Environmental News Daily*, 3/5 and 3/23/99

Construction Site Runoff Indictment: In the first indictment in southern **Alabama** involving silt runoff at construction sites, Charles Talbert of Vossberg, MS, was

arrested in early March for allegedly violating the federal Clean Water Act while doing site preparation work in Mobile in 1997 and 1998. J. Don Foster, the U.S. attorney for southern Alabama, said he expects more such cases unless contractors get vigilant about protecting streams from pollution. Sources: *AP/Birmingham News* online, 3/8/99 and *National Journal's GREENWIRE, The Environmental News Daily*, 3/9/99

Montana Enviro Leases: Environmental groups that lease state lands in an effort to protect wildlife are "reeling" from steep new lease rates that reflect what the lands would bring if they were developed. Clive Rooney of the Dept. of Natural Resources said he cannot ignore rising property values because state officials are required to get the maximum return on state properties. Sources: *AP/Billings Gazette*, 3/4/99 and *National Journal's GREENWIRE, The Environmental News Daily*, 3/9/99

Minnesota Water Buffer Bill: Legislation introduced in the Minnesota House would limit logging and require buffer zones around streams on state and county managed lands. The bill, promoted by the *National Audubon Society*, would ban clearcutting in 250-foot buffer zones around lakes and streams and allow only selective logging in watersheds elsewhere. It also would mandate a 40-foot no-logging buffer zone around seasonal ponds and a 100-foot buffer around permanent wetlands, where only selective logging could occur. *Audubon's* proposal is "similar but more restrictive" than the compromise plan passed last year by the *Minnesota Forest Resources Council*, which suggested voluntary buffer zones of between 50 and 200 feet. Sources: *John Myers, Duluth News-Tribune*, 3/9/99 and *National Journal's GREENWIRE, The Environmental News Daily*, 12/22/98 and 3/9/99

Berkeley Pit Microbes: Microorganisms found thriving in the "toxic stew" of **Montana's Berkeley Pit**, part of the nation's largest Superfund site, could help naturally clean up the highly polluted waters, scientists say. Researchers at the site in Butte, MT, have found a variety of single-celled life in the 1.5-mile-wide, 1,800-foot-deep copper mine pit. The pit has been filling with water laced with arsenic and heavy metals since the mine was abandoned about 17 years ago. Until recently it was assumed to be unable to support life. Some of the organisms found may eventually help clean up the water by

making the heavy metals precipitate. And scientists are looking at some of the microbes as possible sources of anti-cancer, antifungal and antibacterial agents. Sources: *Mark Matthews, Washington Post*, 3/8/99 and *National Journal's GREENWIRE, The Environmental News Daily*, 3/8/99

NE, KS, WY Water Wars: Nebraska Gov. Mike Johanns (R) said in early February that his state is open to negotiating settlements of its water fights with **Kansas** and **Wyoming**. However, he said a settlement is "unlikely." Nebraska and Wyoming are mired in a 13-year-old lawsuit over North Platte River water use. Sources: *Kevin O'Hanlon, AP*, 2/10/99 and *National Journal's GREENWIRE, The Environmental News Daily*, 3/11/99

Frog Force: Interior Secretary Bruce Babbitt asked Congress in late February to approve more than \$9 million for research into the decline of amphibians throughout the U.S. Up to one-third of the nation's 230 species of frogs, toads and salamanders are in decline, Babbitt said. And reports of deformed frogs are on the rise. Scientists suspect a diverse group of culprits, including pesticide contamination, increases in UV radiation, fungal infections and loss of



wetlands. Ron Heyer of the *Smithsonian Institution* said, "All amphibian biologists are now convinced that something unusual and catastrophic is happening to amphibians". The 15-agency federal *Task Force on Amphibian Decline and Deformities* launched a program called *Frog Force*, which is intended to encourage volunteers to gather information on vanishing or deformed frog populations. Sources: *Erin Kelly, USA Today*, 2/25/99; *Reuters/ABC News*, 2/24/99; *Seth Borenstein, Philadelphia Inquirer*, 2/25/99; and *National Journal's GREENWIRE, The Environmental News Daily*, 9/24/98, 2/25/99

Pennsylvania Contamination: US EPA officials visited several farms in Montgom-

ery County, PA, in March to investigate livestock deformities and stunted crop growth. The EPA conducted a series of water and soil tests on the farms in January but found no evidence that could explain the area's high death rates among pigs and the bizarre birth defects, such as displaced stomachs and reversed leg joints, among cattle. Some farmers, such as Tom Yarnall, have reported that their pigs and crops have turned purple. The problems were first noted in the early 1990s. The EPA will also review the environmental record and practices of the *Cabot Corp.* chemical plant in Boyertown, just a few miles from the farms. The plant was listed by the Nuclear Regulatory Commission in 1992 as being seriously contaminated with radioactivity, but it was taken off the list last year after contaminants were removed. Still, farmers suspect it may be responsible for the livestock and crop defects. Sources: *Matt Stearns, Philadelphia Inquirer*, 3/5/99 and *National Journal's GREENWIRE, The Environmental News Daily*, 3/5/99

Kansas River Pollution: Johnson County, Kansas wastewater officials hope the results of a study on ammonia discharges will show that costly upgrades to the county's Mill Creek Regional Treatment Facility are unnecessary. The plant exceeds federal discharge levels and will require a \$30 million upgrade to protect aquatic life in the Kansas River if officials cannot find scientific evidence to back their assertion that the standards are too strict. Sources: *Finn Bullers, Kansas City Star*, 2/15/99 and *National Journal's GREENWIRE, The Environmental News Daily*, 2/17/99

Montana Fertilizer Regs: A bill before the state House would require the state Dept. of Environmental Quality to set limits on acceptable hazardous waste allowed in fertilizer. There are no national standards for heavy metals, arsenic or organochlorine in fertilizer products. Sources: *Erica Curless, Billings Gazette*, 2/12/99 and *National Journal's GREENWIRE, The Environmental News Daily*, 2/17/99

Wisconsin River Pollution: A Wisconsin biologist says thousands of dead fish along the Wisconsin River pose a disposal problem because they contain too much poison to be dumped inland. The fish, which are contaminated with dioxins and PCBs, are casualties of a die-off caused partly by last summer's drought. Sources: *AP/Milwaukee Journal-Sentinel*, 2/15/99 and *National Journal's GREENWIRE, The Environmental News Daily*, 2/17/99

Mississippi River Delta Disappearing: Southern Louisiana's Mississippi River Delta wetlands are "vanishing" at a rate of 40 acres/hr. Since 1930, the state has lost more than 1 million acres of wetlands due to water diversions and industrial projects. If this loss continues, "most of the southern part of the state" will be underwater by 2050. And these estimates do not take into account predictions of rises in sea level due to global warming. Gene Turner of *Louisiana State University* says canals are the biggest cause of wetland loss. Turner said, "If water levels can't rise and fall naturally, these plants die and the land sinks away." Current federal and state funds will only prevent an estimated 22% of the expected land loss over the next 50 years. Estimated costs to stabilize the area are about \$14 billion. Some Midwestern scientists believe that the Gulf of Mexico's hypoxia (oxygen deficit) problem is, in part, due to the loss of the Mississippi River's coastal wetlands. In its natural form the River delivered its nutrient laden waters to the Gulf through a complex network of rich coastal wetlands which stabilized suspended and dissolved materials before they could reach the Gulf. The dikes and levees that today isolate the River from its coastal wetlands in order to create a deepwater ship canal also deliver its nutrient laden waters off shore directly into the deep waters of the Gulf, bypassing the River's life-giving wetlands. This delivery process has been likened to a hypodermic syringe (the ship canal) delivering drugs (nutrient laden waters) to the addict (the Gulf of Mexico). In the process the River's coastal wetlands are deprived of the sediments they need to replenish and maintain themselves against the constant onslaught of coastal erosion caused by the wave action and tides of the Gulf of Mexico. Sources: Colin Woodard, *Christian Science Monitor*, 2/18/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 2/18/99

Mississippi Gravel Mining Fines: The Mississippi state Senate seeks to impose penalties of up to \$25,000 on sand and gravel operators that repeatedly mine without permits. Sources: *USA Today*, 1/28/99 and

Endangered Species Tax Credits: South Carolina State Sen. Phil Leventis (D) has introduced the Endangered Species Incentive Act to allow tax credits for homeowners who have endangered species on their land and are willing to work with state officials on habitat management. Leventis said the legislation would "bring in a new era of

partnerships for endangered species protection". Sources: *AP*, 1/28/99 and National Journal's GREENWIRE, *The Environmental News Daily*, 1/29/99

Multi-State Trout Recovery: Federal protection for cutthroat trout "may be unnecessary" if states are able to develop conservation agreements, federal and state wildlife managers said at a recent meeting in Salt Lake City. The U.S. Fish and Wildlife Service (FWS) is helping develop grants for states to work on agreements and management plans for cutthroat recovery, according to Mike Stempel, the agency's fisheries supervisor for **Montana, Wyoming, North Dakota and South Dakota**. But the Boulder, CO-based *Biodiversity Legal Foundation* (BLF) has petitioned the FWS to list the Bonneville and Yellowstone cutthroat trout as federally threatened or endangered species, and it is preparing a petition to force the FWS to list the Colorado River cutthroat trout. The group criticized the idea of state conservation agreements in place of federal protection, saying the agreements alone have never brought back species and are not enforceable or adequate for restoration efforts. BLF executive director Jasper Carlton said, "It's all verbal garbage. ... every subspecies of cutthroat trout from Mexico to Canada is in serious trouble." The FWS "is close" to issuing a decision on whether to list the Bonneville trout, and it has put the petition for the Yellowstone trout on hold until at least 3/99. Meanwhile, the U.S. Forest Service in early December gave permission to poison non-native fish in a portion of **Montana's** Lee Metcalf Wilderness in order to reintroduce native Westslope cutthroat trout. The project supported by the Montana Dept. of Fish, Wildlife and Parks, would kill rainbow, brook and Yellowstone cutthroat trout in Cherry Lake and Cherry Creek in order to reintroduce the Westslope, which is a candidate for listing under the federal Endangered Species Act. Sources: *AP/Casper [WY] Star-Tribune*, 12/7/98; Joe Kolman, *Billings Gazette*, 12/8/98; and National Journal's GREENWIRE, *The Environmental News Daily*, 12/8/98

Southeastern Rivers: The *World Wildlife Fund* and local environmental groups met in Chattanooga, TN in mid March to discuss the pressures that population growth and pollution are placing on rivers in the South. The groups plan to call on state governments to protect the most threatened waterways in a 250,000-square-mile area from **Virginia to Florida and west to Mississippi**. The region is home to half the

freshwater fish in the US, many of which are known only to specific rivers, as well as to rare salamanders, river otters and snapping turtles. Participants called for better national forest management plans and increased voluntary conservation efforts by private landowners. A coalition of southern Appalachian environmental groups attending the meeting identified several rivers and watersheds it believes should be protected to preserve the region's "rich diversity of aquatic life." The group's report names 15 watersheds in **Tennessee, Virginia, Kentucky, Alabama, North Carolina and South Carolina** "most critical" to protecting about 100 species of fish, crayfish and mussels. Susan Andrews, ecologist for the *Southern Appalachian Forest Coalition* said "Many of the region's streams have experienced a 50% decline in species during this century. If these native creatures no longer live in the water they've inhabited for millions of years, what does that tell us?" An additional 22 smaller watersheds were also recommended for protection because they contain special features or biological richness. Meanwhile, a group of Clifton, TN, residents in mid March filed a lawsuit in US District Court seeking to stop the construction of a limestone quarry and a barge terminal on the Tennessee River. *Save Our Air, Rivers & Recreation* (SOARR) says the project would hurt area wells and catfish beds and add noise and ground pollution to the quiet countryside. SOARR attorney Frank Fly said the Army Corps of Engineers, which issued a permit for the project, "failed to prepare an environmental impact statement, which is required any time there is a major federal action". Sources: *AP/Biloxi Sun Herald*, 3/15/99; Morgan Simmons, *Knoxville News-Sentinel*, 3/17/99; *The Tennessean*, 3/10/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 3/15 and 3/17/99

River Logging: Environmentalists and some state officials are concerned that river logging – the practice of salvaging from river bottoms lumber that sank while being floated to saw mills decades ago – could damage fish habitat. Biologists say river logging could destroy spawning areas and bottom debris where fish seek shelter and food. Some projects to remove the fine-grain lumber have been stalled by objections, and the practice has been banned in **Florida**. River logging proponents say that environmental disruptions are temporary and that the practice helps restore the river to its original condition. Sources: Jerry Allegood, *Raleigh News & Observer*, 1/3/99

Yellowstone Bioprospecting: A federal judge on 3/24 ordered a temporary halt to a "precedent-setting" deal between Yellowstone National Park and a biotechnology firm for the right to prospect in the park's geysers and hot springs for commercially valuable microbes. Citing concerns that the agreement with San Diego-based *Diversa Corp.* was a "dramatic change" in policy for the National Park Service (NPS), Judge Royce Lamberth ordered the profit-sharing deal suspended pending an environmental impact assessment. Lamberth ruled that the NPS has "failed to seek public input" on the Yellowstone plan and has denied requests from Congress, environmental groups and the press for financial details of the agreement. The decision is a "blow" to the NPS's new approach to insuring that parks and the public benefit from commercially useful products based on the parks' natural resources. Preston Scott, a consultant for the park who helped develop the agreement, said the ruling would not stop bioprospecting in Yellowstone. Scott said, "Diversa's permit to collect is still in place -- but now the park will get no money and no information." Park officials said they would comply with the judge's ruling by beginning an environmental assessment of the deal. But Scott also said NPS will appeal the decision. Sources: Andrew Pollack, *New York Times*, 3/26/99; Michael Milstein, *Billings Gazette*, 3/26/99; Tom Lackey, *AP/Casper [WY] Star-Tribune*, 3/25/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 3/26/99

Yellowstone Lake Trout: In follow-up to a miscellaneous note regarding the Yellowstone Lake lake trout problem reported in the November/December issue of *River Crossings*, Jack Wingate, Minnesota Dept. of Natural Resources, informs us that the lake trout were introduced into Yellowstone Lake in the early 1900's by the National Park Service (NPS). Wingate says, however, that the NPS has never been willing to acknowledge this introduction.

Climate Change Update

There is a "compelling basis for legitimate public concern" about global climate change resulting from human activities, according to the *American Geophysical Union* (AGU). In a public statement released in January,

the AGU said that scientific uncertainty about the issue "will never be completely eliminated" but that "does not justify inaction." "While the statement recommended the development of strategies for dealing with global warming, it did not propose any specific solutions". Other scientific groups have reached similar conclusions, but "from the standpoint of scientific credibility, the (AGU) statement could rank among the most influential yet".

The industry-based *Global Climate Coalition* said the AGU "verified [its] concerns that the science behind global climate policies is uncertain" And S. Fred Singer of the *Science & Environmental Policy Institute* in

Fairfax, VA, said, "I quibble with the politics, procedures and science [involved]. I say the science is faulty, misleading and incomplete". The report acknowledged that the observed global temperature increase is not

"outside the range of climate variability of the last few thousand years". And it noted that factors other than greenhouse-gas emissions affect the climate.

Meanwhile, "Two new studies of the Earth's ancient atmosphere may alter the way scientists understand the relationship between airborne carbon dioxide and climate change." In one study, published in the 3/12 issue of the journal *Science*, researchers at the *Scripps Institution of Oceanography* in San Diego addressed the "chicken-or-egg" question of whether rising levels of atmospheric CO₂ have preceded or followed increases in global temperatures. "Contrary to what many believe, the team concluded that the temperature rise comes first, followed by a carbon dioxide boost 400 to 1,000 years later". "Carbon dioxide levels in the atmosphere fluctuated after the Ice Age, helping to heat up Earth's climate and trigger the spread of deserts." The study, based on analysis of hundreds of Antarctic ice cores, also suggests the CO₂ fluctuations were caused by changes in vegetation, not the oceans, as has previously

been postulated.

The other study, published in the 3/11 issue of the journal *Nature*, found that global atmospheric levels of CO₂ have varied "considerably" over the last 10,000 years. According to study co-author Thomas Stocker of the *University of Bern* in Switzerland, one implication is that experts will need to stop referring to the "pre-industrial CO₂ concentration" as if it were a constant. Greenhouse skeptics "will probably jump" on these papers as "proof" that there is no necessary causal relation between carbon dioxide levels and temperatures, said Anthony Broccoli of the *Geophysical Fluid Dynamics Lab* in Princeton, NJ. But in fact, he said, the new findings are consistent with a "positive CO₂-temperature feedback" system in which changes in one prompt changes in the other. And none of the ancient climate changes involved a rate of CO₂ change like that occurring today, said Gerard Bond of *Lamont-Doherty Earth Observatory* at *Columbia University*.

At a conference in Ames, IA, on farming, energy and global climate change, Thomas Spencer, who chairs the foreign affairs and security policy committee of the European Parliament, "warned U.S. farmers against the temptation to dismiss the threat of global warming." And he praised Sen. Richard Lugar (R-IN) for urging greater efforts to develop biofuels from corn, soybeans, straw and animal wastes.

Meanwhile, a direct examination by *University of Munich* scientists of the actual behavior of plants across Europe (616 springtime surveys and 178 autumn surveys on genetically identical plants from 77 controlled sites spread from Ireland to Hungary and from Finland to Macedonia) appears to confirm" earlier findings that "spring warmth is arriving sooner and autumn coolness is coming later in the Northern Hemisphere. The previously reported study, published in the current issue of the journal *Nature*, found that from 1959 to 1993, "the advent of botanical spring advanced an average of six days, while autumn was delayed an average of about five days." "Modeling studies" showed that 70% of the lengthened growing season could be explained by rises in daily temperature. The researchers attributed the rising temperatures to a general global warming trend rather than any "urban heat-island" effect, as only a few of the research sites were in urban areas. Ranga Myeni of *Boston University* "said all the recent studies indicate that a warming and greening of the planet is indeed under way,



and that the growing season should lengthen further if temperatures continue to rise." One result could be higher agricultural and timber production in northern regions. The study lends "powerful support" to the idea that human-caused emissions of greenhouse gases are causing global warming. Annette Menzel of the university's department of forest science calls it a "clear sign from the biosphere that we can observe global change. Ten days may not sound [like] much, but it represents a significant extension of a growing season of about 150 days." A longer growing season could cause plants to absorb more greenhouse gases from the atmosphere, the researchers say.

The *Pew Center on Global Climate Change* in early February released a study that finds climate change has the potential to affect livestock, crops and local agricultural economies. The report suggests grain yields could fall significantly in Southern states and rise in the North. Changes in grain production and foraging areas could also cause shifts in livestock production. And a change in the frequency or intensity of events such as storms, droughts and early or late frosts could also affect agriculture. The report also points to the "secondary" impacts of climate change, which could include higher ozone smog levels and changes in water resources or pest populations. The report on agriculture is the first in a series to be released by the *Pew Center* this year. Other studies will address the potential impacts of climate change on water resources, coastal areas, human health, ecosystems and forests.

Meanwhile, the *Pew Center* announced that *ABB*, a Swiss-based energy and engineering group; *Entergy*, a New Orleans-based energy company; and *Shell International*, a unit of the *Royal Dutch Shell Group*, are joining the *Pew Center's Business Environmental Leadership Council*. The companies join a group of 19 other companies that are committed to greater understanding of and action on climate change. Claussen said, "The decision by these three global leaders to join our effort continues to signal a growing shift in the climate change debate. These businesses, representing diverse sectors, have recognized the serious challenges created by climate change and have committed to working toward solutions that can keep both the environment and the economy healthy".

Sources: William Stevens, *New York Times*, 1/29/99; Peter Spotts, *Christian Science Monitor*, 1/29/99; *GCC* release, 1/28/99; Joyce Howard Price, *Washington Times*, 1/29/99; Joseph Verrengia, *AP/Boston Globe*, 3/1/99; Curt Suplee, *Washington Post*, 3/15/99; Steve Agence France-Presse, 3/1/99; William Stevens, *New York Times*, 3/2/99;

Nick Nuttal, *London Times*, 2/25/99; Connor, *London Independent*, 2/25/99; *Pew Center* release, 2/10/99; and *National Journal's GREENWIRE, The Environmental News Daily*, 1/29, 2/1; 3/1, 3/2 and 3/15/99

States Short Changing Fish and Wildlife

Despite the huge economic benefits generated for states by hunting, fishing and wildlife watching, most state governments are shortchanging fish and wildlife management, according to a new *Izaak Walton League of America* (IWLA) report. In "Passing the Buck: A Comparison of State Fish and Wildlife Agency Funding and the Economic Value of Wildlife-Associated Recreation," IWLA reports that hunting, fishing and wildlife watching generated more than \$254 billion in estimated total economic impact in the U.S. during 1996. These activities also combined to support 2.9 million jobs, paying roughly \$68.6 billion in wages and salaries, and contributed more than \$5 billion in state sales and income tax. In spite of the enormous economic impacts provided by wildlife-associated recreation, however, the report reveals that the overwhelming majority of states fail to provide adequate financial support for fish and wildlife management. Rather, they depend almost exclusively on hunters and anglers for funding their state agencies' operations.

"Sportsmen are justifiably proud of their financial support," said Paul Hansen, IWLA executive director, "but they cannot be expected to carry the entire load if the fish and wildlife management challenges of the new millennium are to be met." Although almost every state now carries a large budget surplus, few reinvest any significant amount into the agencies responsible for stewarding the natural resources that support recreation-generated tax revenues. In 22 states, fish and wildlife agencies received less than 20% of their overall budgets from the state general fund or a dedicated tax source in fiscal year 1995. Another 20 states provided absolutely nothing to their agencies from the state treasuries. "Clearly, most state legislatures do not appreciate the relationship between the substantial revenues provided to the private sector and the state by wildlife-associated recreation, and the role fish and wildlife agencies play in providing those recreational opportunities," said *Wildlife Management Institute* President Rollin Sparrowe. Current unmet needs - especially conservation efforts for nongame species - emerging challenges, and increasing public expectations demand a new approach to funding fish and wildlife management from state governments.

In a March 19 letter, Hansen urged all state governors to increase the direct financial investment in their fish and wildlife agencies in order "to become a full financial partner in conserving fish and wildlife resources."

Contact: Ron Scott, *IWLA* senior conservation associate, at (301) 548-0150, ext. 229

E-Cards and WWF

E-Cards are the postcards of the Internet. These virtual greeting cards are free and feature wildlife, people, places, live-video, animations, and more. Since its inception, E-Cards has supported *World Wildlife Fund* (WWF), and is the second-largest source of traffic to WWF's own Web site. Through its card content and card write-ups, E-Cards provides educational information about wildlife and the environment. E-Cards may be sent to anyone with Web access and an e-mail account. E-Cards can be accessed at <http://www.e-cards.com>. To learn more about this and other partnerships, visit the WWF Web site at <http://www.worldwildlife.org/help/new/mktg>

Wildlife Forever State-Fish Art Contest

National Fishing Week recently announced a great activity for kids aged 4-12. Kids are being invited to draw, paint, color or sketch their state fish. Winners will be chosen from the best artwork from each state. Winning artwork will be displayed at the *Mall of America* during a week-long *State Fish Expo*, on *America Online* and in *North American Fisherman* magazine.



Get all the details, list of state fish, complete rules and judging criteria on *AOL* (keyword: FISH ART), on the web at <http://www.statefishart.com>, or by calling 877-FISH-ART. Have fun while you learn more about your state fish and fisheries conservation! Sponsors include *Mall of America*, *America Online*, *North American Fishing Club*, *Cabela's*, *Careco Television Productions, Inc.*, and *National Fishing Week*.

May 9-14: 15th International Symposium on Biotelemetry, Juneau, AK. Contact: John H. Eiler, (907) 789-6033, john.eiler@noaa.gov.

May 10-11: 6th Annual LMRCC Meeting, Holiday Inn Memphis East, Memphis, TN. Contact: Ron Nassar, LMRCC Coordinator, (601) 629-6602.

May 13-14: 26th Annual Conference on Ecosystem Restoration and Creation, Tampa, FL. Contact: Frederick J. Webb, (813) 757-2104, webb@mail.hcc.cc.fl.us.

May 16-19: National Watershed Coalition's 6th National Watershed Conference, Austin, TX. Contact: John W. Peterson, Executive Director, National Watershed Coalition, 9304 Lundy Court, Burke, VA 22015-3431, (703) 455-6886, jwpeterson@erols.com.

May 23-28: 10th International Soil Conservation Organization Conference – Sustaining the Global Farm, Local Action for Land Stewardship, Purdue University, West Lafayette, IN. Contact: Mark Nearing, Purdue University, 1196 SOIL Bldg., West Lafayette, IN 47907-1196, (765) 494-8673, isco99@ecn.purdue.edu.

May 25-28: 47th Annual Meeting of the

North American Benthological Society, Duluth, MN. Contact: Stephen W. Golladay, (912) 734-4706, <http://www.benthos.org>.

June 1-4: Evaluating the Benefits of Recreational Fishing, The Fisheries Centre, University of British Columbia, Vancouver, BC. Contact: Gunna Weingartner, (604) 822-0618,

June 5-13: National Fishing Week, Your Home Town. Contact: Your local fish and game agency or National Fishing Week Steering Committee, 1033 N. Fairfax St., Suite 200, Alexandria, VA 22314, (703) 684-3201, Fishingweek@gofishing.org

August 2-6: 9th Annual National Gap Analysis Program Meeting, Duluth Entertainment Convention Center, Duluth, MN. Contact: (208) 885-3555, gap@uidaho.edu

August 6-8: 1999 Annual Convention of the N. American Native Fishes Association, Jumers Castle Lodge, Champaign-Urbana, IL. Contact: NANFA, 8401 North Lakewood Place, West Terre Haute, IN 47885, (812) 535-4175 or (812) 535-1230.

August 29-Sept. 2: 129th Annual Meeting

of the American Fisheries Society, Adam's Mark Hotel, Charlotte, NC. Contact: Betsy Fritz, (301) 897-8616, ext. 212, bfritz@fisheries.org

Sept. 21-22: Vegetation of the Upper Mississippi and Illinois River System: Status, Management and Ecological Systems, Radisson Hotel, La Crosse, WI. Contact: Penny Tiedt, UW-La Crosse, La Crosse, WI 54601, (608) 785-6503, FAX (608) 785-8221, rada@mail.uwlax.edu

Sept. 23-25: International Conference of the Society for Ecological Restoration, Presidio, San Francisco, CA. Contact: SER, 1207 Seminole Highway, Suite B, Madison, WI 53711, (608) 262-9547, (608) 265-8557, ser@vms2.macc.wisc.edu

October 24-27: 4th Microcomputer Applications in Fish and Wildlife Conference. Caesars Tahoe Hotel, Stateline, NV. Contact: Jeff Trollinger, OFWIM Treasurer, c/o VDGIF, 4010 West Broad St., Richmond, VA 23230-1104, (804) 367-1185, jtrollinger@dgif.state.va.us

Nov. 29-Dec. 3: 1999 Congress on Recreation and Resource Capacity, Snowmass Village, Aspen, CO. Contact: Susan Scott Lundquist, (970) 491-4865, FAX (970) 491-2255,

Congressional Action Pertinent to the Mississippi River Basin

Endangered Species

H.R. 494 and 495: Endangered Species Fair Regulatory Process Reform and Land Management Reform acts, (W.M. Thomas R/CA).

H.R. 960: (G. Miller (D/CA). Amends the Endangered Species Act of 1973 to strengthen the commitment to protect wildlife, safeguard our children's economic future, and provide assurances to local governments, communities, and individuals.

H.R. 1101: R. Pombo (R/CA). Amends the Endangered Species Act of 1973 to improve the ability to prevent flood disasters.

Environment

S. 352: State and Local Government Participation Act of 1999, C. Thomas (R/WY). Amends the National Environmental

Policy Act (NEPA) of 1969 to require that Federal agencies consult with State agencies and county and local governments on environmental impact statements. The House Resource Committee scheduled oversight hearings on NEPA on April 21.

S.481: Environmental Crimes and Enforcement Act of 1999, C.E. Schumer (D/NY). Provides for protection of government employees and the public from environmental crimes.

H.R. 525: Defense of the Environment Act of 1999, H.A. Waxman (D/CA). Requires any Congressional provision that reduces environmental protection to: (1) identify and describe the provision, (2) assess the extent of the reduction, (3) describe actions taken to avoid the reduction, and (4) recognize any statement of the Comptroller General assessing the reduction.

Population Growth

H. Con. Res 17: Population Growth Resolution (T.C. Sawyer (D/OH). Expresses the sense of Congress that the U.S. should develop, promote, and implement, at the earliest possible time and by voluntary means consistent with human rights and individual conscience, the policies necessary to slow U.S. population growth.

Public Lands

S. 446: (B. Boxer D/CA). Provides for permanent protection of U.S. resources in the year 2000 and beyond.

S. 510: (B.N. Campbell R/CO) and H.R. 883: (D. Young (R/AK). Preserves U.S. sovereignty over public and acquired lands, and preserves state sovereignty and private property rights in non-federal lands surrounding public and acquired lands.

S. 532: (D. Feinstein (D/CA) and H.R. 1118: (T. Campbell (R/CA) Provides increased funding to resume state grant funding for the Land and Water Conservation Fund and development of conservation and recreation facilities in urban areas under the Recreation Recovery Programs.

S. 446: (B. Boxer D/CA); S. 568: (C. Thomas R/WY) and H.R. 154: (J. Hefley (R/C). Establish fee systems for commercial filming activities on public lands.

H.R. 1002: Declaration of Taking Act, (D. Hunter (R/CA). Amends the subject act to require that all condemnations of property by the government proceed under that Act.

H.R. 1142: D. Young (R/AK). Ensures that landowners receive equal treatment to the government when property must be used.

H.R. 1207: B.F. Vento (D/MN). Prohibits the U.S. government from entering into agreements related to public lands without Congressional approval.

Refuges

H.R. 1199. R.W. Pombo (R/CA). Prohibits expenditure of Land and Water Conservation Funds for new National Wildlife Refuges without Congressional authorization.

H.R. 1284: Minnesota Valley Refuge Bill, D. Young (R/AK). Provides protection for the Minnesota Valley National Wildlife Refuge and protected species to ensure scarce refuge land in and around the Minneapolis, MN metro area are not subjected to physical and auditory impairment.

Regulations

S. 746: Regulatory Improvement Act of 1999, S.M. Leven (D/MI). Improves the ability of Federal agencies to use scientific and economic analyses to assess cost-benefits and risk assessments of regulatory programs.

Tennessee Valley Authority

S. 123: TVA Funding Act, R.D. Feingold (D/WI). Phases out Federal funding for the Tennessee Valley Authority.

Water Resources

S. 123: (R. Wyden D/OR). Directs the Secretary of the Army to develop and implement a comprehensive program for fish screens and passage devices.

S. 507: Water Resources Development Act, (J. Warner R/VA). Provides for construction of various projects in rivers and harbors of the U.S.

S. 685: (M. Crapo R/ID). Preserves state authority over water within their boundaries and delegates states the authority of Congress to regulate water.

S. 740: (L. Craig R/ID). Amends the Federal Power Act to improve coordination and licensing processes.

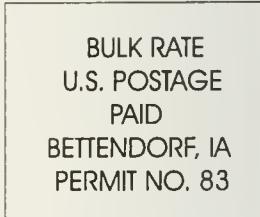
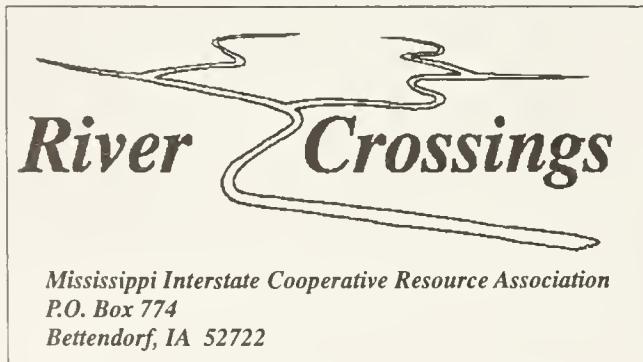
Water Quality

S. 20: Brownfield Remediation and Environmental Cleanup, F.R. Lautenberg (D/NJ). Directs the EPA to establish a program to provide grants to States and local governments to inventory and conduct site assessments of brownfield sites. Defines brownfield sites as facilities suspected of having environmental contamination that could limit their timely use and can be readily analyzed.

S. 493: (P. Sarbanes D/MD). Requires the U.S. Army, Corps of Engineers to conduct pilot projects on toxic microorganisms in tidal and non-tidal waters.

H.R. 684: Farm Sustainability and Animal Feedlot Enforcement Act, (G. Miller (D/CA). Amends the Clean Water Act.

H.R. 1290: Federal Water Pollution Control Act (FWPCA), W.B. Jones (R/NC). Amends the FWPCA related to wetlands mitigation banking.



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River Crossings

Volume 8

May/June 1999

No. 3

Ten Most Endangered Rivers

The Washington, D.C. - based environmental group, *American Rivers*, released on 4/12 their 14th annual listing of the ten most endangered rivers in the U.S. Included on that listing were four Mississippi River Basins rivers - Missouri River, Yellowstone River, Fox River, and Coal River. Provided below is *American Rivers'* listing of all ten rivers, their location, reasons for listing and a brief summary of the issues.

(1) Lower Snake River - Washington - Federal Dams: To avoid the extinction of wild Snake River salmon and steelhead, the Clinton Administration must partially remove four dams on the lower Snake River. By replacing the free flowing Snake River with a series of slackwater pools, the dams have created lethal obstacles to migrating adult and juvenile fish. All four remaining stocks of Snake River salmon are listed as endangered and Snake River steelhead are listed as threatened. Legally obligated to release a Snake River salmon and steelhead recovery plan in 12/99, the administration's decision will determine the fate of these species. For More Information, Contact: Tim Stearns, *Save Our Wild Salmon*, 206-622-2904; Rob Masonis, *American Rivers*, 206-213-0330; Justin Hayes, *American Rivers*, 202-347-7550; or Beth Chasnow, *Taxpayers for Common Sense*, 202-546-8500, beth@taxpayer.net

(2) Missouri River - Montana, North Dakota, South Dakota, Nebraska, Iowa, Kansas, Missouri - Channelization, Dams, Bank Stabilization, Poor Grazing Practices: Meandering channels, thousands

of islands and sandbars, and a rich flood plain of wetlands, grasses, and forests characterized the Missouri River of Lewis and Clark. Today, the river has been largely channelized into a barge canal, impounded



American Rivers

behind gigantic dams, and cut off from its floodplain by flood control levees. The river's few remaining natural sections are increasingly threatened by bank stabilization, poorly managed livestock, and dam operations that ignore the needs of recreation, wildlife, and riverside communities. Fortunately, proposals to boost habitat

restoration spending, reform dam operations, and revitalize riverfronts create an unprecedented opportunity to revitalize our nation's longest river. For More Information, Contact: Chad Smith, *American Rivers*, 402-730-5593; Gary Raedeke, *Teddy Roosevelt Group - Sierra Club*, 701-328-4740; John Davidson, *South Dakota Canoe Association*, 605-677-5361; Ione Werthman, *Audubon Society of Omaha*, 402-493-0373; or Bill Griffith, *Sierra Club/Kansas Chapter*, 913-651-1480

(3) Alabama-Coosa-Tallapoosa River Basin - Georgia, Alabama - Sprawl, Water Withdrawals, Pollution, Dams: Home to one of the richest, and now most endangered, collections of freshwater aquatic organisms in the world, the Alabama-Coosa-Tallapoosa (ACT) River Basin is under siege by Atlanta, GA-the nation's most sprawling city. Water wars are no longer the exclusive domain of the

Inside This Issue

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arid West. Population pressures and growing industrial and agricultural development are increasing out-of-basin water withdrawals and diversions, exacerbating water quality impairment, and threatening construction of new dams that would alter natural flows and severely fragment these rivers. The 12/99 ACT Water Compact between Georgia, Alabama, and Florida promises either a comprehensive solution or an enormous lost opportunity for visionary water resource management in the basin. For More Information, Contact: Andrew Fahlund, *American Rivers*, 202-347-7550; Brad McLane, *Alabama Rivers Alliance*, 205-322-6395; Dick Bronson, *Lake Watch*, 256-825-9353; or Beth Fraser, *Coosa River Basin Initiative*, 706-235-0131, crbi@roman.net

(4) Upper San Pedro River - Arizona and Sonora, Mexico - Sprawl, Groundwater Pumping: The Upper San Pedro River, highly valued for its biological diversity and importance for neotropical migrating birds, is threatened by rapid depletion of the regional aquifer that maintains the river's year-round flows. The threat to this natural treasure stems from the growing community of Sierra Vista, which owes its existence to the US Army's Fort Huachuca. Groundwater pumping in the Sierra Vista region has reduced the amount of groundwater feeding the river by 30%. These two communities are pumping water out of the aquifer faster than it can be replenished, causing a steady decrease in the river's flows during the dry season. The failure of the city and the Army base to take action to bring the groundwater deficit into balance directly threatens the existence of the San Pedro, its vast ribbon of riparian habitat, and the diversity of species that thrive there. For More Information, Contact: Mindy Schlimgen-Wilson, *American Rivers*, 602-234-3946; or Al Anderson, *Huachuca Audubon Society*, PO Box 63, Sierra Vista, AZ 85636, has@theriver.com

(5) Yellowstone River - Montana, North Dakota; Bank Stabilization, Flood Control: The Yellowstone, one of our nation's most beloved rivers, is threatened by piecemeal bank stabilization. As private landowners attempt to stabilize one of the nation's last freely meandering rivers, the Yellowstone is increasingly being converted into a rock-lined channel, endangering the river's economically important trout fishery and storied cottonwood gallery. Rather than permitting the Yellowstone to be converted into an armored ditch, the Army Corps of Engineers should issue a moratorium on new bank stabilization permits and work with landowners to reduce the need for riprap and flood control levees.

For More Information, Contact: Scott Faber, *American Rivers*, 202-347-7550; Dennis Glick, *Greater Yellowstone Coalition*, 406-586-1593; or Jim Barrett, *Park County Environmental Council*, 406-222-0723, envirocouncil@imt.net

(6) Cedar River - Washington - Sprawl, Water Withdrawals: If allowed to thrive, the Puget Sound Basin's Cedar River could produce one of the largest runs of salmon and steelhead in the state of Washington. The Cedar has not been allowed to fulfill its potential, however, as unchecked development from Seattle - one of the nation's ten most sprawling cities, according to the *Sierra Club* - has caused Cedar River runs to decline dramatically. Victims of the urban crush, Puget Sound chinook salmon are now listed under the federal Endangered Species Act. Unfortunately, Seattle's strategy for protecting what remains of the Cedar's salmon runs -

implementing a 50-year Habitat Conservation Plan (HCP) - may have the opposite effect. If accepted by the federal government, the HCP will allow more water to be taken from the river, further degrading salmon habitat and fueling even more urban sprawl. For More Information, Contact: Katherine Ransel, *American Rivers*, 206-213-0330; Charlie Raines, *The Sierra Club -- Cascade Chapter*, 206-523-1347; or Eric Espenhorst, *Friends of the Earth*, 206-633-1661, foenw@wolfsnet.com

(7) Fox River - Illinois, Wisconsin - Sprawl, Pollution, State Agency Inaction: In the 1970s, the Clean Water Act reduced industrial and municipal pollution in the Fox River and transformed the river from an unhealthy eyesore to a popular recreation destination. Today, the impacts of urban sprawl from the rapidly growing Chicago area threaten to shatter this success story. If state

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River Crossings is a mechanism for communication, information transfer, and coordination between agencies, groups and persons responsible for and/or interested in preserving and protecting the aquatic resources of the Mississippi River Drainage Basin through improved communication and management. Information provided by the newsletter, or opinions expressed in it by contributing authors are provided in the spirit of "open communication", and do not necessarily reflect the position of MICRA or any of its member States or Entities. Any comments related to "River Crossings" should be directed to the MICRA Chairman.

and local officials do not take steps now to improve municipal wastewater treatment and reduce agricultural and suburban runoff, the river will revert to its degraded past. For More Information, Contact: Jeff Stein, *American Rivers*, 202-347-7550; Jack Darin, *Sierra Club, Illinois Chapter*, 312-251-1680; Kathe Lacey-Anderson, *Friends of the Fox River*, 815-455-1537; Cindy Skrukud, *McHenry County Defenders*, 815-338-0393; and Robert Moore, *Prairie Rivers Network*, 217-344-2371, robmoore@earthlink.net

(8) Carmel River - California - Sprawl, Water Withdrawals, Dams: The Carmel River described by John Steinbeck in *Cannery Row* in 1945 no longer exists. Although migratory birds still flock to the mouth of the river and the upper reaches are home to an abundance of wildlife, many species struggle to survive. If Monterey County does not take immediate action to control sprawl and overuse of water from the river, California and the nation will lose what Steinbeck described as a river that "in its course has everything a river should have." For More Information, Contact: Margaret Bowman, *American Rivers*, 202-347-7550; George Boehlert, *Carmel Valley Property Owners' Association*, 831-659-7028; Clive Sanders, *Carmel River Steelhead Association*, 831-375-5376; Mary Ann Matthews, *California Native Plant Society*, Monterey Bay Chapter, 831-659-2528; Gillian Taylor, *Sierra Club/Ventana Chapter*, 408-659-0298; Jim Edmondson, *California Trout*, 805-584-9248, troutmd@earthlink.net

(9) Coal River - West Virginia - Mountaintop Removal Coal Mining: The Coal River in West Virginia, which flows through the Appalachian Mountains-one of the world's oldest ranges-is under siege by mountaintop removal coal mining. In this practice, entire mountain tops are leveled to expose valuable seams of low-sulfur coal. The leftover soil and rocks, which are dumped into adjacent valleys, have already buried over 200 miles of streams in the Coal River watershed. If the appropriate state and federal agencies do not force mining companies to comply with Clean Water Act and Surface Mine Control and Reclamation Act regulations, this form of coal mining will continue to destroy waterways and landscapes on an unprecedented scale. For More Information, Contact: Suzy McDowell, *American Rivers*, 202-347-7550, Pam Moe-Merritt, *West Virginia Rivers Coalition*, 304-637-7201; Cindy Rank, *West Virginia Highlands Conservancy*, 304-924-6263; Janet Fout, *Ohio Valley Environmental Coalition*, 304-522-0246; or Randy Sprouse, *Coal River Mountain Watch*, 304-854-2182, crmw@citynet.net

(10) Bear River - Utah - Sprawl, Water Withdrawals, Proposed Dam: The Bear River, the largest source of freshwater flowing into the Great Salt Lake and home to a world-renowned wildlife refuge, could soon fall prey to the Salt Lake City region's growing thirst. The Salt Lake City area is consuming water faster than most other urban areas in the country. (Utah has the second highest per capita water consumption rate in the country, coupled with the lowest water prices in the Rocky Mountain region.) Because of rock-bottom water rates, much of this arid region's limited water supply is being used wastefully (e.g., on desert lawns, yards, and golf courses). The area's rapidly increasing water consumption has drastically reduced Bear River flows, depriving the refuge's remarkable diversity of birds and animals of the water they need to survive in the desert. Instead of developing incentives to curtail Salt Lake City's over consumption of water, the water district wants to build a diversion dam. Under the current plan, Utah taxpayers would have to foot the bill for the proposed dam, which could reduce flows to the Bear River Migratory Bird Refuge even further. There are viable alternatives to the diversion dam, such as water conservation, that could protect the Bear River and its valuable wildlife habitat. For More Information, Contact: Mary Orton, *American Rivers*, 602-234-3946; Matt Sicchio, *American Rivers*, 202-347-7550; or Zach Frankel, *Utah Rivers Council*, 801-486-4776,

Source: *American Rivers Release*, 4/14/99

Dam Removal Issues

In what may be the first environmental complaint against the removal of a dam, activists in Duluth, MN protested in late April against dismantling a *Northern States Power Co.* (NSP) dam near the South Shore on Wisconsin's Iron River.

NSP says it wants to abandon and remove the Oriental Dam, damaged in a 1985 flood, because repair costs are too expensive for the small amount of hydroelectric power it can produce. However, environmentalists object because they say that removing the dam will allow non-native species to migrate up the river and "wreak environmental havoc." But the Wisconsin Dept. of Natural Resources (DNR) says the state would build a barrier on the site to keep harmful species away. Resource officials add that removing the dam would bolster populations of steelhead, coho salmon and brown trout in Lake Superior. Critics say the dam protects the stream against the

lake's predatory lampreys and other unwanted aquatic life, like zebra mussels and the ruffe. The DNR offers assurances that it will install a lamprey barrier. But besides the lamprey threat, protesters said removal of the dam might allow non-native steelhead trout and coho salmon to spawn in the river, reducing the habitat for brook trout.

"In this case, we have the chance to let the dam's owner, NSP, pay to remove it," said Ted Smith, a DNR water supervisor in Superior. "In many cases in Wisconsin, these old dams have been left to fail and taxpayers are left holding the bill to maintain them or get rid of them years down the line," he said. However, according to Mike Gellerman of Port Wing and a member of the *Save Iron River Association*, the dam may actually help the Iron retain some of its natural state. "It's the last protected waterway on the south shore. The dam was built before all these foreign species got into Lake Superior," Gellerman said. "These salmon and steelhead are just as much a nuisance as ruffe in my book. We can never go back to a truly natural setting because of all the species that have come into the lake but we can keep this river natural." A hearing examiner last July authorized the dam removal. The opinion has been appealed to Circuit Court in Bayfield.

In the Pacific Northwest, environmentalists are working with taxpayer groups to convince Congress that breaching dams along the lower Snake River would not only help fish, but save taxpayers money, the *Portland Oregonian* reports. The groups hope to "tap regional rivalries" in Congress and build a coalition that can overcome Northwest lawmakers who oppose dam removal. But Northwest Congressionals already are "punching holes" in the groups' arguments. Rep. Peter DeFazio (D/OR) says *Taxpayers for Common Sense* failed to account for payments to the government by the Bonneville Power Administration, which produces electricity at federal dams. And Sen. Gordon Smith (R/OR) says dam removal advocates did not consider the effects of economic growth and taxes generated by the dams.

Meanwhile, several conservation and fishing groups (*American Rivers*, *American Whitewater* and *Trout Unlimited*) on 3/31 filed a federal lawsuit alleging that the Army Corps of Engineers is violating the Clean Water Act along the Lower Snake River, where federal biologists say the Corps' four dams are the largest single threat to

declining salmon and steelhead trout populations. The groups say that the dams create slack water reservoirs where temperatures rise to levels lethal to fish and that uncontrolled spillage over the dams in the spring can lead to high levels of nitrogen gas in the water. They say removing the earthen portions of the dams may be the "best and least expensive way to restore cool water for salmon and eliminate the dissolved gas problem".

The groups on 3/30 "blasted" legislation they said would weaken environmental protections in federal licensing of hydropower dams. Sen. Larry Craig (R/ID) in late April introduced a bill to amend the Federal Power Act, which currently requires federal authorities to consider environmental and energy concerns when licensing hydropower dams. Craig's bill would "limit the abilities of federal agencies to protect natural resources and burden the agencies with more than a dozen new procedural, process and oversight requirements." Similar legislation will be introduced in the House by Rep. Edolphus Towns (D/NY). The groups said these bills would "attack" the progress made in improving river conditions across the country under the current relicensing process. Steve Moyer of *Trout Unlimited* said, "These bills ... would be harmful to fish and other aquatic resources. They are being pressed by elements of the hydropower industry who want to make up their own rules".

On another front, Sen. Craig stars in an *Idaho Farm Bureau* video informing the public on the issue of breaching the lower Snake river dams to save salmon. Craig urges people to pay attention to the issue because there may be a ballot initiative. Meanwhile, the *Portland Oregonian* reports that a "serious blow" to the Endangered Species and Clean Water acts almost occurred last year without environmental lobbyists taking notice when Sen. Slade Gorton (R/WA) pushed for legislation, but failed, to give Congress control over the fate of the Northwest's federal dams.

On a more positive front, the Portland-based *PacifiCorp* is working on the last details of a plan to remove a dam on a Columbia River tributary in Washington state. The license for the Condit dam on the White Salmon River is up for renewal, but *PacifiCorp* in 1997 decided that removing the dam would cost less than half the \$30 million needed for an upgrade that would comply with modern environmental laws. Environmental groups and tribes were supportive of

PacifiCorp's decision, which will help restore runs for endangered fish. Final details of the plan must be finished by 6/1 or the Federal Energy Regulatory Commission may order the company to make the repairs.

In Montana and Idaho the *Avista Corp.* has agreed to spend about \$200 million over 45 years to restore the Clark Fork River without removing two dams or radically changing their operations. The commitment includes more than \$43 million to help threatened bull trout and other fish bypass the dams. It is part of the power company's application to get federal relicensing of its Noxon Rapids and Cabinet Gorge dams, which expire in 2001 and account for 60% of *Avista*'s power generation. *Avista* also has agreed to increase its minimum flow of water from the Cabinet Gorge Dam from 3,000 to 5,000 cfs, which will help fish habitat downstream. Biologists are optimistic about the role of the agreement in helping fish.



In California, the \$50.7 million removal of San Francisco-based *Pacific Gas & Electric*'s Battle Creek dam system is the "most ambitious salmon restoration effort" in the Sacramento Valley and "one of the most extensive dam removal projects" in the country. Five out of 15 dams will be removed allowing both Battle Creek forks to run higher and cooler. Biologists believe the project will successfully restore two endangered species of chinook and two other species that have been proposed for listing because the area is sparsely populated and the creek is "pocked with dependable cold springs".

In South Carolina, Gov. Jim Hodges (D), concerned over fish kills caused by Russell Dam's reversible turbines, is urging Sens. Strom Thurmond (R/SC) and Ernest Hollings (D/SC) to amend the 1999 federal Water Resources Development Act to force

the Army Corps of Engineers to devise a mitigation plan "acceptable" to Georgia and South Carolina

In Maine, using high-tech military equipment originally designed to track Soviet submarines, scientists will monitor the shoreline above Edwards Dam on Maine's Kennebec River to help researchers track changes to the environment over time. New varieties of plant and animal species are expected to colonize the wider shoreline zone after the dam is dismantled. Heather Jacobson of the *University of Maine* said the images could become a national model for the study of new shorelines.

Addressing watershed issues, Rep. Frank Lucas (R/OK) has introduced legislation that would spend \$600 million over the next 10 years to rehabilitate thousands of small, upstream watershed dams across the U.S. A House Agriculture subcommittee held a hearing on the bill on 4/14. Lucas said he wants "to get across that these dams are part of our basic infrastructure, like the highways, like the airports." Further, he said, "If we spend a little money up front, we can prevent huge costs" in the future.

And finally, Sen. Craig (R/ID), Sen. Bob Morton (WA/R) and Rep. Helen Chenoweth (R/ID) criticized the 206 scientists who sent Pres. Clinton a letter this Spring supporting the breaching of four lower Snake River dams. Craig, Morton and Chenoweth say it was inappropriate for the scientists, particularly those who are government employees, to take a position on such a "bitterly disputed" issue

Sources: John Myers, *Duluth News-Tribune*, 4/28/99; *Associated Press* Newswires, 4/28 and 5/3/99; *Portland Oregonian*, Barnett/Hogan, 4/19/99; Jonathan Brinckman, *Portland Oregonian*, 4/1/99; *American Rivers*, *American Whitewater* and *Trout Unlimited* News Releases, 3/30 and 3/31/99; Nancy Vogel, *Sacramento Bee*, 5/4/99; Jim Barnett, *Portland Oregonian*, 4/1/99; AP/Casper [WY] *Star-Tribune*, 4/13/99; Jim Barnett, *Portland Oregonian*, 4/13/99; Dan McGillivray, *Kennebec [ME] Journal*, 3/29/99; Chris Casteel, *Oklahoma City Daily Oklahoman*, 4/15/99; Robert Pavey, *Augusta Chronicle*, 3/25/99; Jonathan Brinckman, *Portland Oregonian*, 3/27/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 9/8/98 and 3/23; 3/30; 4/2, 4/13; 4/16; 4/20, 4/29, 5/5/99

Environmentalists, usually critical of the Tennessee Valley Authority's (TVA's) land management and pollution control efforts, "are finding reasons to praise the agency." And the agency's decision against selling public lands that developers wanted to use for two, multi-million dollar projects is among several other decisions that have drawn "grudging support from activists". Stephen Smith of the *Tennessee Valley Energy Reform Coalition* said, "TVA is beginning to develop an environmental track record again. It's new and welcome, and I think there are better things yet to come".

Speaking further at a three-day March conference on the TVA's "environmental, historical and societal effects" at the *Tennessee Technological University*, Smith said TVA should continue managing waterways and public lands and do more to reduce air pollution. Further he said that the region must begin to demand other sources of energy such as solar and wind power. He urged the agency to convert it's power plants to cleaner-burning natural gas. Janice Nolen of the *American Lung Association of Tennessee* said the TVA's coal-burning plants, which account for 60% of the agency's power, "play a major part" in air pollution in the region.

Meanwhile, TVA officials have said the agency will not "draw back" on maintaining its public lands, despite Congressional cuts to its annual budget. And on 4/21 it's board of directors approved a management plan for 11,000 mi² of shoreline in the TVA system. The Shoreline Management Initiative is a compromise drafted after environmentalists, property owners and politicians criticized the original proposal. It limits the maximum amount of shoreline that can be developed to 38%, down from 48%. There are no new fees for property owners and lake users, and the plan also includes a shoreline management zone of 50 ft. The zone limits tree-trimming and vegetation cutbacks. Ruben Hernandez, TVA VP of resource stewardship said, "What we're trying to do is balance the resource needs, the recreation and the shoreline development that takes place".

Sources: *AP/Birmingham News online*, 3/23 and 3/24/99; Jacques Billeaud, *Knoxville News-Sentinel*, 3/24/99; Add Seymour Jr., *Knoxville News-Sentinel*, 4/22/99; Rachel Zoll, *AP/Birmingham News Online*, 4/22/99; National Journal's GREENWIRE, *The Environmental News Daily*, 3/17, 3/23, and

outside source.

The primary reason for the quarantine was to (1) take precautionary measures in order to prevent the spread of an unknown virus, (2) protect the pallid sturgeon at all facilities, and (3) identify the unknown organism.

Non-lethal, non-invasive tissue samples were collected by the Bozeman FHC from the pallid sturgeon at all three locations; from the shovelnose sturgeon from Gavins Point and Bozeman FTC; and from the wild populations below Oahe Dam and the Yellowstone River. Plans have been made to also collect samples from wild populations during May and June, if it becomes necessary.

At this time, it is suspected that the unknown virus has always been present in the wild sturgeon population. However, the testing being conducted should begin to answer this question.

Source: *USFWS Upper Basin Pallid Sturgeon Update #99-3*, 5/6/99

New Madrid Floodway Controversy

A \$65 million federal program is being considered near New Madrid, MO (along the Mississippi River near the Ohio River confluence) to drain more than 30,000 acres of wetlands. These wetlands provide important seasonal habitats for the Mississippi River's floodplain spawning fishes and for it's migratory birds. At the same time the federal government is spending millions of dollars more to create wetlands elsewhere and to restore endangered species habitats. After the flood of 1993 proved the importance of riverine wetlands not only to river species, but also for use as areas for storage and conveyance of floodwaters, environmental interests say this is mind boggling!

Under the New Madrid project, the U.S. Army Corps of Engineers plans to complete a levee system to cut off the last piece of flood plain in Missouri that is connected to the Mississippi River. At the same time, the Missouri Department of Natural Resources wants to spend \$1.2 million to keep part of the area wet. The state plans to build a berm around a state park to retain floodwater needed for the health of the last remnants of the giant hardwood forest that once covered the river valley. As mitigation, the Corps has proposed to drill 20 relief wells in the park. The wells will be used to pump water



Adult pallid sturgeon being released into one of the Missouri River reservoirs after data collection.

Although the virus was found in shovelnose sturgeon at Gavins Point, there are several aspects that are positive with this situation. Herb Bollig from Gavins Point has been diligent in maintaining proper culturing techniques to ensure that cross contamination between the pallid sturgeon and the shovelnose sturgeon did not occur. In addition to this, the pallid sturgeon at all three facilities have not shown any outward symptoms of the virus. Finally, at this time, there does not appear to be any indication that the fish were contaminated from an

into the park to keep the trees wet and to imitate annual spring flooding. Unfortunately, well water has a different chemistry from surface water and some biologists question whether the chemistry of the well water will adversely affect the trees.

Justification for this project is to provide flood protection for the village of Pinhook, MO, a small 52 resident community, which nearly every year becomes an island surrounded by backwater from the flooding Mississippi River. Sometimes for weeks at a time, Pinhook's 52 residents go to work and school using boats or tractors to get over flooded Mississippi County roads. Residents of Pinhook and the neighboring community of East Prairie consider the flooding an annual irritant that saps the area's economy. But environmentalists say the floods are precious acts of nature that provide priceless habitat for spawning fish, a resting place for migratory waterfowl and rejuvenation for rare plant species – and therein lies the controversy over the over the \$65 million plan.

Area residents can't wait for the plan to be completed, complaining that flooding hurts the largely agricultural economy and prevents businesses from moving to the region. "The project will take care of our biggest problem," said Kathie Simpkins, city administrator of East Prairie, population 3,416. "This has been on the drawing boards for fifty years." However, environmentalists say the project will hurt wildlife and waste taxpayers' money. Tim Searchinger, senior attorney for the *Environmental Defense Fund*, said the plan is a "testimony to the stupidity of government."

Searchinger said the federal government is spending billions of dollars elsewhere in order to (1) take 36 million acres of cropland out of production, (2) restore wetland environments and (3) reduce crop surpluses. "This project spends tens of millions of dollars to do precisely the opposite," Searchinger said.

The plan, called the *St. Johns Bayou and New Madrid Floodway Project*, is the latest skirmish in a 100-year war with the Mississippi River. For generations, levee and drainage districts and the Corps of Engineers have battled the river and its tributaries from Cape Girardeau south to the Bootheel. They have used diversion ditches, levees and drainage canals to draw water off lowlands as flat as a billiard table and just as green. Soybean and corn fields have replaced swamps and forests. But they've left one piece of land to the river. It's called

the *New Madrid Floodway*, which begins just south of Cairo, IL, and extends 33 miles down to New Madrid, Mo. With the exception of little settlements like Pinhook, Dorena and Wolf Island, the floodway is largely uninhabited farmland. The Corps has designated the floodway as a place for the swollen Mississippi to go rather than flooding nearby Cairo or Wickliffe, Ky.

If the river gets too high at Cairo, there is a plan to blow a hole in the New Madrid Floodway levee, allowing the river to spread over the floodway's 132,000 acres. At the south end of the floodway near New Madrid, there is a 1,500 ft. gap in the levee that would allow the water to escape. Now, when the Mississippi gets high -- usually in the winter and spring -- water flows into the floodway from the south through the 1,500 ft. gap and covers about 17,000 acres. That's what brings water around Pinhook. Sometimes the floodwater stays until late June, affecting crop planting.

Under the Corps plan, the 1,500 ft. gap in the levee would be closed with gates to prevent flooding. A large pump would be installed to take water out of the floodway when the gates are closed because of high water on the Mississippi. The Corps plan also deals with water problems in the nearby St. Johns Bayou Basin. Heavy rain and drainage in the basin sometimes flood as much as 13,000 acres. Gates at the mouth of the bayou are supposed to let water out, but when the Mississippi is too high, the gates are kept closed to prevent the river from backing up into the St. Johns Bayou. Under the Corps plan, another pump would be installed to pump water out of the basin.

The U.S. Fish and Wildlife Service, the Missouri Department of Conservation, the *Environmental Defense Fund* and the *Ozark Chapter of the Sierra Club* are all concerned about the project's impact on wildlife habitat. The major concern is the loss of natural spring flooding and the removal of fish access to spawning areas by cutting off the New Madrid Floodway from the Mississippi River. The groups say the project is not consistent with protection of wetlands. If flooding is a problem, they suggest building a levee around East Prairie to guard against local flooding while leaving the New Madrid Floodway untouched to preserve the fish habitat.

This Spring, seven environmental groups wrote President Bill Clinton asking him to conduct a review of three Corps drainage projects including the St. Johns Bayou-New

Madrid Floodway plan. The letter noted that the Clinton Administration had set a goal of restoring wetlands while discouraging flood plain development. The letter said the three projects did just the reverse. "Past drainage efforts have eliminated 95% of the wetlands along the lower Mississippi River, making the river's few remaining wetlands critical for the survival of wildlife," the letter said. "Wetlands which are connected to tributaries which flow freely into the Mississippi, like those that will be destroyed by the St. Johns Bayou-New Madrid Floodway Project, are particularly rare and provide important spawning areas for fish."

Of the 2.5 million acres of forested wetlands that once covered southeast Missouri, only about 50,000 acres remain. About 40% of those remaining forests are located within the Corps project. The environmental groups say the project's benefits to small numbers of people do not justify its cost in money and wildlife habitat. Searchinger said protection of East Prairie makes up only a small fraction of the justification for the \$65 million project. Farmers whose land will be protected from flooding are the major beneficiaries. "It's highly questionable how much that farm income will help," Searchinger said. "We've drained 95% of the delta and it hasn't helped these small remaining hamlets. Why would draining the remaining 5% help them?" Searchinger said increasing the number of acres that can be used for crops will cost farmers in the end. "The increased production on the additional acreage actually lowers prices that are paid to other farmers and then all the farmers will lose income," Searchinger said.

The Taxpayers for Common Sense, a group based in Washington, D.C. issued a report that listed the St. Johns-New Madrid Floodway project as one of the 16 most wasteful spending projects in the Mississippi River Basin. "The New Madrid Floodway, if drained, would be open for development rather than remaining a designated floodway," the report said. "This would force the federal government to pay up to \$10 million to flood it in the future." That's because once the flood control project is built, the Corps would have to pay landowners for flood easements in order to use the land as a floodway.

While environmental groups are concerned about the project's impact on the region, officials of the state Department of Natural Resources worry over what it will do to a 1,000 acre preserve that contains the last remnants of the original swamp forest that

once covered the Mississippi Valley down to the Gulf of Mexico. The refuge is Big Oak Tree State Park, a national natural landmark, 15 miles southeast of East Prairie. In the 1960s, the park contained nine national champion trees – trees larger than any other of their species in the country. Only the Great Smoky Mountains National Park had more. Periodic flooding of the park is what keeps the trees healthy, because the park contains tree species that thrive when their roots are wet. The floods' sediments also bring in nutrients that help plant life. In recent years, the park's champion trees have been dying and are not being replaced. Naturalists believe the drier conditions caused by the drainage of the region are hurting the diversity of the park.

The recent history of this project, as summarized below from newspaper accounts (emphasis added), represents a classic example of how water resource developments in this country are completed by "working the seams" of government, leveraging different regulations and agencies, and in some cases working one government program against another to gain authorization and funding that otherwise would not be economically feasible or in the greater public interest.

The project gained momentum in 1989 (four years before the great floods of 1993) when seven inches of rain fell over a two-day period, and local schools were closed for a week, sewers collapsed and sandbags were needed to keep water out of a nursing home. After that, East Prairie sought designation as a **federal enterprise community**, which would allow it to get **special government economic assistance**. During the grant application process, the community identified its water problem as the No. 1 obstacle to progress. **The grant enabled East Prairie to get around a federal requirement that local communities come up with 35% of the cost of Corps of Engineers projects.** Although the Corps plan had been drafted for years, it could never be implemented before now because residents and businesses of East Prairie and Mississippi County could not come up with the 35% match. In 1994, Clinton declared East Prairie an Enterprise Community because of its poverty and unemployment. **The designation allowed the U.S. Department of Agriculture to provide grants that could be used for the local match.** As a result, the local sponsor only has to come up with 5% of the funds while the federal government provides the rest (95%) at taxpayer expense.

Lynn Bock, the attorney for the *St. Johns Levee and Drainage District*, said the Corps project was "heavily mitigated," meaning that the Corps was offering lands elsewhere to make up for the loss of river-connected wildlife habitat. The Corps plan calls for the purchase and reforestation of more than 9,500 acres of frequently flooded agricultural land to cover the losses of the flood plain habitat.

The recommended Corps mitigation proposal, summarized above, is a prime example of the Corps offering to trade off "priceless backwaters" that are presently connected to the Mississippi River for other habitats that are not – and that may be located long distances from the River. It is not possible for the Corps to mitigate for connected riverine habitats because for the most part "they no longer exist". Virtually everything has been leveed off, and this is one of the reasons why riverine fish species are becoming more and more threatened. Unless the replacement habitats are connected to the River they are of no use to riverine fish! Perhaps, as recommended in policy proposed by the White House's 1994 "Galloway Report", it would be in the greatest public interest in this case to relocate the 52 residents of Pinhook and encircle the larger communities with levees.

Source: *St. Louis Post-Dispatch*, 5/9/99

Mountaintop Removal Issues

The US Office of Surface Mining (OSM) and the West Virginia Division of Environmental Protection (DEP) on 3/13 announced a new policy to limit the amount of waste rock and earth dumped into valley streams. The proposal would require coal operators to restore to the hilltops most of the rock and earth displaced during mountaintop removal mining. Materials that can only be dumped into valley fills due to mine maintenance rules would be excepted. Currently, individual permit review engineers determine what constitutes the federal "approximate original contour" (AOC) reclamation standard. DEP officials, who have criticized the OSM for the lack of a detailed AOC, say the new policy would make the standard "more consistent and objective".

Then on 4/15 a week after being "scolded" by Sen. Robert Byrd (D/WV) and Rep. Nick Rahall (D/WV) "for taking too long to process mining operations," the US EPA and

Army Corps of Engineers approved a 336 acre mine for *Pittson Coal Management Co.* on the Clay-Nicholas county line in West Virginia. The permit had been tied up for months by the mountaintop removal controversy. As part of the *Pittson Mine* approval the company agreed to (1) reduce the size of the mine's fills, (2) cut the length of streambed affected by mining operations and (3) improve the mine's in-stream sediment pond

Meanwhile, U.S. District Judge Charles Haden has ordered state and federal regulators to withhold permits for a mountaintop removal mine near Blair, WV, until the court resolves a lawsuit challenging the permit on environmental grounds. The *St. Louis Post-Dispatch* reports that since Haden's ruling "tension has continued to mount in a region where coal field violence is legendary". Some 30,000 miners held a 24-hour work stoppage on 4/2 to "memorialize the frail condition of America's most basic of smokestack industries." *United Mine Workers* Pres. Cecil Roberts, who ordered the stoppage, says "the American coal industry might well be eliminated" because of costly pollution controls and unrealistic demands by environmentalists.

An OSM report shows that about 450 mi.² of West Virginia are currently disturbed by surface coal mining. Coal operators last year received permits to strip twice as many acres as they reclaimed, the report said.

Sources: Ken Ward, *Charleston [WV] Gazette*, 4/16/99; *USA Today*, 4/16/99; Bill Lambrecht, *St. Louis Post-Dispatch*, 4/16/99; Ken Ward, *Charleston [WV] Gazette*, 3/14 and 3/17/99; Martha Hodel, *AP/San Francisco Chronicle/Examiner/online*, 4/2/99; and National Journal's *GREENWIRE, The Environmental News Daily*, 3/4, 3/17 4/2 and 4/16/99

Acid Rain Still A Problem

Despite "important strides" in reducing air pollution, acid rain remains a "serious problem" in New York's Adirondack Mountains and is "a growing threat" in the southern Appalachians, Colorado's Front Range and elsewhere, according to a new federal report. The study by the National Acidic Precipitation Assessment Program, a consortium of federal agencies, warns about the continued effects of acid rain in sensitive regions and provides more evidence that acid rain is "more complex and intractable" than was believed 10 years ago.

Findings show that high elevation forests in Colorado, West Virginia, Tennessee and Southern California are nearly saturated with nitrogen, a key ingredient in acid rain. And high-elevation lakes and streams in the Sierra Nevada, the Cascades and the Rocky Mountains may be on the verge of "chronically high acidity." Excess nitrogen also afflicts the Chesapeake Bay's acidity and is increasing in many waterways in the Adirondacks.



A report released by the *Massachusetts Campaign to Clean Up Polluting Power Plants* found that sulfur dioxide releases in New England rose 41% from 1996 to 1998, nitrogen oxides increased 23.9% and carbon dioxide increased 37.1%. The "sharp increase" in emissions, resulting from electricity generators burning cheap oil instead of natural gas, "dims hopes" that new natural gas plants would quickly clear the region's air by forcing older plants to close. New England power plants had been reducing emissions by adding pollution controls, closing older facilities and burning more natural gas. Between 1989 and 1995, Massachusetts plants reduced sulfur dioxide emissions by 60%, according to the Energy Information Agency.

Last year the US EPA ordered 22 states in the East and Midwest to further reduce emissions of nitrogen oxide, and Sen. Daniel Patrick Moynihan (D/NY) has proposed legislation that would further reduce airborne pollutants. Environmentalists say the recent reports may "help broaden political support" for the legislation. But the electricity industry thinks the EPA efforts are enough. John Kinsman of the *Edison Electric Institute* said, "These policies are going to get you where Moynihan's bill will get you."

Source: James Dao, *New York Times*, 4/5/99; Scott Allen, *Boston Globe*, 4/6/99; National Journal's GREENWIRE, *The Environmental News Daily*, 4/6/99

Forest Service Criticized

Nine environmental groups have called on the chief of the U.S. Forest Service (USFS) to halt timber sales in "impaired watersheds" of the Bighorn National Forest (NF) in Wyoming until Bighorn's forest management plan can be revised. The groups cited "frustration over continuing mismanagement" at Bighorn. Specifically, the groups cited: "harassment of employees," approval of timber sales that might harm wildlife, opening trails without environmental review and "suppression of a forest plan amendment that would have reduced logging" among their concerns.

In Vermont, *Forest Watch*, an environmental group, says the USFS suppressed two public opinion surveys on managing the Green and White Mountain national forests because the polls found "broad support" for preserving the forests and little support for logging. The USFS denied the allegations, and noted that the 1996 survey on Green Mountain National Forest was presented at a 1996 conference. The survey for the White Mountain National Forest was not released, but a USFS representative said a summary of the survey will appear in a report currently being printed. The USFS is beginning a "long-overdue" overhaul of management plans for both the Green Mountain and White Mountain national forests.

In Minnesota, hoping to bolster its campaign against logging in national forests, the *Sierra Club* is using radio ads to launch a "hard-nosed attack" on logging in the Superior National Forest. The ads say intensive logging is damaging to the forest's ecosystems and destroying fish and wildlife habitat. Less than 8% of all U.S. timber comes from national forests, but in Minnesota, about 10% of the timber harvested comes from the Superior and Chippewa national forests.

In Montana, a federal judge has struck down a USFS proposal to log a portion of the Hyalite Creek drainage south of Bozeman, saying the agency "failed to consider the cumulative effects that other logging in the area would have on wildlife habitat." The decision marks the second time a timber sale for the area has been defeated by the courts.

Meanwhile in Oregon, a USFS biologist at the Umpqua National Forest has accused her superiors of undercutting efforts to restore salmon runs in order to advance timber

sales. In a letter to a federal judge, Cindy Barkhurst petitioned to be allowed to join plaintiffs in a lawsuit challenging 24 timber sales in the Umpqua. Barkhurst says the USFS has "harmed the public's trust" by hiring inexperienced people and nonbiologists on a team that consults with the National Marine Fisheries Service on whether logging threatens coho salmon and Umpqua River sea-run cutthroat trout. A 4/98 ruling blocked the 24 timber sales, saying that the federal government failed to adequately protect wildlife from the impacts of logging.

Sources: Michael Milstein, *Billings Gazette*, 4/20/98; Robert Braile, *Boston Globe*, 4/18/98; Myers/Lincoln, *Duluth News-Tribune*, 4/20/99; Joe Kolman, *Billings Gazette*, 4/21/99; Jeff Barbard, *AP/Idaho Falls Post Register*, 5/9/99 and National Journal's GREENWIRE, *The Environmental News Daily*, 4/30/98; 4/21 and 5/10/99

Toward Sustainable Forestry Values

A report released by the *World Commission on Forests and Sustainable Development* says that "We can satisfy the world's material needs from forests without jeopardizing their ecological services." The group, launched by a coalition of former world leaders, held public meetings on five continents over the last three years. In its report, the panel recommends a four-point plan to involve people in forest decisions on the global, national and regional levels. The plan, called *ForesTrust*, would include:



- *Forest Watch*, a network of citizens and decision makers;
- A *Forest Management Council* to certify products as forest-friendly;
- A *Forest Ombudsman* to identify corruption and abuse; and
- A *Forest Award* to recognize successes in sustainable forest management.

The report also proposes creating a *Forest Security Council*, to be made up of officials, scientists, business people and groups from the heavily forested countries. And it recommends introducing a *Forest Capital Index* that would reflect the economic values of forests beyond their timber.

Commission Co-Chair and former prime minister of Sweden Ola Ullsten said, "Fixing the forest crisis is basically a matter of politics. It is about governments assuming their mandate to protect their natural resources – including forests – for the long-term benefit of their citizens". UN Environment Program Executive Director Klaus Toepfer said, "Most importantly, the report offers a way out of this crisis. It specifies reforms needed, from abandoning subsidies and tax incentives that provoke forest destruction to more openness in timber allocation procedures".

Sources: *Environmental Media Services* release, 4/19/99; *UNEP release*, 4/19/99; *National Journal's GREENWIRE, The Environmental News Daily*, 4/19/99

Ag Waste Update

The Oklahoma Wildlife Department has filed suit against *Seaboard Farms Inc.* to keep the company from operating a "huge" hog farm in Beaver County. Seaboard wants to populate the *Dorman Sow Farm* with 25,000 hogs.

North Carolina Gov. Jim Hunt (D) has called for a 10-year phaseout of hog lagoons – open waste pits that sometimes pollute waterways. Meanwhile, NC Division of Water Quality officials are investigating a 1.5 million gallon hog waste spill in the southeastern part of the state that started from a breach in a *Murphy Family Farms* waste lagoon dam in late April. Water officials tracked the waste plume into Persimmon Creek and an adjacent wetland, and monitored the ecological effects.

In South Dakota, work is underway on what eventually will become the third-largest hog farm in the world "in spite of strong opposition by the federal government, environmentalists, animal rights activists and a coalition of tribal members and other local residents." Construction of the \$105 million, 1,200 acre facility near the Rosebud Sioux Reservation

east of Rapid City resumed in March after a federal judge accused Kevin Gover, Assistant Interior Secretary for Indian Affairs, of abusing his discretionary powers and acting in an "arbitrary and capricious" manner when he ordered work stopped on environmental grounds. Environmentalists and some tribe members say waste from the hog farm will contaminate underground aquifers and cause serious air pollution from ammonia and methane gas rising from evaporation ponds.

In Nevada, *Rockview Farms Inc.*, a dairy, has been fined \$250,000 after admitting it negligently dumped 1.7 million gallons of cow waste that eventually made its way into the Amargosa River in California, a violation of the Clean Water Act

In Maryland, an administrative law judge has ruled that one of the state's largest hog farms is big enough to require an anti-pollution permit. The decision filed in early May gave Frederick County farmer Rodney Harbaugh 20 days to scale back his herd from 4,000 animals to fewer than 2,400 until he secures a state permit for concentrated animal feeding operations. Harbaugh's farm has caused a rift between neighbors who complain about odors and environmental risks and other area farmers who complain that the government is hindering their right to earn a living. Harbaugh's lawyers said that state environmental officials have "no right to interfere with Harbaugh's operation of his farm." Harbaugh said his farm's design makes water pollution problems virtually impossible.

Meanwhile, as part of a "broadening effort" to limit water pollution from the Maryland poultry industry, the state Dept. of the Environment will soon prohibit slaughterhouses from applying more sludge to fields than crops can digest. Under new rules that will become a condition for slaughterhouse permits, facility operators will be required to test soils and apply only the sludge load needed to fertilize crops. They will also have to keep detailed records of the sludge use. New conditions regulating manure

disposal were added to the permits in March. A *Baltimore Sun* editorial calls the new manure disposal rules "a commendable action to stem the flood of farm pollutants into the Chesapeake Bay" (4/5).

The *Baltimore Sun* also reports that there are thousands of miles of agricultural drainage ditches in Maryland and Delaware that serve as "rapid-delivery systems" to the Chesapeake Bay for pollutants which bypass natural filters like streams and wetlands. The ditch networks are created and maintained to drain farmland. By channeling agricultural runoff straight to the bay, they increase bay levels of nutrients responsible for algal blooms that reduce oxygen, kill underwater grass and possibly trigger toxic *Pfiesteria* outbreaks. Efforts to reduce the ditches' impact on the bay are underway, but are complicated by the dependence of farmers and "sprawling" communities on the networks to minimize flooding. "You plug up the ditches, and it's not just farming you'd affect. You'd have trouble inhabiting some of these areas at all," says John McCoy of the Dept. of Natural Resources. The US EPA has "largely ignored ditching," but EPA officials "say they will be getting more involved with the issue" and plan to challenge a new, large ditching project in Delaware. Drainage ditches (and tiles) like these are common everywhere in the U.S. That includes much of the Mississippi River Basin.

On 4/15 Senate Finance Committee Chair William Roth (R/DE) introduced legislation to amend the Internal Revenue Code to make electric plants fueled by chicken droppings eligible for the same tax credits enjoyed by windmills and other alternative energy sources. Roth's bill would give power plants that burn chicken droppings a 1.7-cent-per-kilowatt-hour tax credit. Poultry is a \$500 million a year industry in Delaware alone, but the "droppings are also a big source of pollution, not to mention ... stench." Roth said, "As the amount of chickens we produce as a nation has grown, so too has the need to find a creative means for disposing of poultry manure"



Meanwhile, in a *Newsweek* (4/26/99) op-ed, Robert F. Kennedy Jr., an attorney for the *Natural Resources Defense Council* and the *Water Keeper Alliance*, attacked industrial farming and the resulting agricultural runoff, saying it is bad for the environment. According

to Kennedy, "North Carolina's hogs now outnumber its citizens and produce more fecal waste than all the people in California." As an alternative, Kennedy advocates small farms, which practice the "highest standards of husbandry and environmental stewardship".

Sources: Bruce Henderson, *Charlotte Observer*, 4/23/99; Mick Hinton, *Oklahoma City Daily Oklahoman*, 4/15/99; AP/Washington Times, 5/14/99; Heather Dewar, *Baltimore Sun*, 5/14/99; Tom Horton, *Baltimore Sun*, 4/8/99; USA Today, 4/21/99; William Claiborne, *Washington Post*, 4/4/99; Peter Goodman, *Washington Post*, 3/30/99; AP/San Francisco Chronicle/Examiner online, 4/27/99; Reuters/PlanetArk, 4/21/99; AP/San Francisco Chronicle/Examiner online, 4/16/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 2/2, 3/19, 4/6, 4/8, 4/14, 4/16, 4/20, 4/22, 4/27/99

Climate Change Update

Significant floods could be more common if projections from a new climate model bear out, said Tom Wigley, leader of a group of scientists at the *National Center for Atmospheric Research* in Boulder, CO (Web Site: <http://goldhill.cgd.ucar.edu/cas/ACACIA/>). The computer simulations ran by Wigley's team showed that levels of atmospheric carbon dioxide, the main gas produced by animals and fossil fuel combustion, could double by 2100. If that comes to pass, global temperatures could increase by 3 °F, generating added winter precipitation over the Plains and the Southwest. "A 40% increase in precipitation would greatly increase the probability of those extreme events" like the Flood of 1993, when much of the Midwest was swamped by record-high waters, Wigley said.

Another new report says that Iowa suffered an average \$543 million in flood damage per year from 1983 to 1997, more than any other U.S. state or territory. The figures are part of the *Extreme Weather Sourcebook*, an Internet site (http://www.dir.ucar.edu/esig/HP_roger/sourcebook) that compares the damages caused by floods, tornadoes and hurricanes in each state. Big floods in 1993 and 1997 also pushed four other Midwest states into the top 10 in damages: Missouri, No. 4; North Dakota, No. 5; Illinois, No. 6; and Minnesota, No. 9. Louisiana came in second, at an average \$479 million; California was third with \$377 million.

Roger Pielke Jr., who compiled the figures, said flood damages across the nation have been increasing steadily to around \$6 billion per year.

A study conducted by the federal *Climate Prediction Center* (CPC) concludes that while the much of the world is getting hotter, the continental U.S. has gotten slightly cooler over the last third of a century. The data runs "counter to what many Americans have been feeling and what scientists have been theorizing." The CPC study concludes "that the cooling has been subtle" and probably not "statistically significant." Since 1966, it is barely one-thirtieth of a degree cooler per decade for the lower 48 states as a whole. The study attributes the overall cooling to lower temperatures in the late summer and fall. The study also finds that nearly the entire country is getting wetter. The U.S. has been getting nearly an inch more precipitation every decade since 1966. Both skeptics and supporters of global warming theories found support for their positions in the study. While opponents say the data confirm the world is not getting warmer, climate-change theorists say the increase of precipitation corresponds with global warming because "rain is nature's air conditioner"



Meanwhile, a team of National Oceanographic and Atmospheric Administration (NOAA) researchers predict that ocean levels along the East Coast will rise by at least 3.5 ft. and average summer temperatures will increase by several degrees over the next 500 years even if levels of greenhouse gas emissions in the atmosphere stabilize over the next half-century. Jerry Mahlman, head of the NOAA Geophysical Fluid Dynamics Lab, used a computer model that showed the changing climate would boost average summer temperatures from Philadelphia to Miami from 80 °F to 87 °F, giving the area "a climate a lot like Southeast Asia." And higher seas would "cover the tip of Florida, all the way from Key Largo to Fort Lauderdale." The NOAA

model also forecasts a shutdown of the Atlantic deep-ocean current responsible for moving heat away from the equator and mixing nutrients for sea life. Mahlman said choices made during the next 100 years will determine whether the computer model becomes reality. "Ninety percent of the warming will occur in the first hundred years, but the problem is, when you think you are done, you get more warming", Mahlman said.

An unprecedented climate shift in Costa Rica, associated with global warming, appears to have already caused a "mysterious" disappearance of 20 frog species, according to findings published in a recent issue of the journal *Science*. The frog declines coincided with a sudden reduction in moisture levels on Monteverde in Costa Rica's highlands, an area referred to as the "cloud forest," according to J. Alan Pounds of the *University of Miami* and other researchers. Several plant and animal species living there depend on extreme moisture levels. Drier conditions, intensified by the El Nino weather pattern, and rising sea surface temperatures weakened several frog and reptile species, causing their populations to be reduced. Michael Lannoo of the *Declining Amphibian Populations Task Force* says Pounds has demonstrated the first animal extinction attributable to modern climate change

Meanwhile, scientists at the *University of Colorado* are "alarmed" to have discovered "a completely new" threat to the global environment, reports the *Daily Telegraph* of New South Wales, Australia. According to a study published in the British magazine *New Scientist*, the earth's mesosphere – between 30 and 55 miles above earth – is cooling at a rate of 33.8 °F per year, and already has cooled by as much as 86 °F. The trend is having the effect of "shrinking" the atmosphere and causing a "second major ozone hole". Researcher Gary Thomas says it is "the latest, the biggest and the most unequivocal signal that the global climate really is changing". The phenomenon is also "a direct result of global warming," reports the *Daily Telegraph*. While the planet seems to be warming at lower altitudes of up to 9 miles, "this has been found to have an opposite effect on the upper levels of the atmosphere." Scientists from the *British Antarctic Survey* in Cambridge also have confirmed that the "sky is falling" as it cools; they say the mesosphere's "surface" has dropped by 5 mi. in the past 40 years. Last year, researchers warned that if greenhouse gases continue

to accumulate in the atmosphere, stratospheric cooling could speed destruction of the ozone layer and yield an Arctic ozone hole as severe as the one over the Antarctic.

University of Colorado and British Antarctic Survey scientists also said that, "Global warming has greatly accelerated the melting of two Antarctic glaciers." Satellite photographs revealed that the Larsen B and Wilkins ice shelves together lost more than 1,800 mi² last year. The scientists attributed the trend to higher average temperatures in the region and a lengthening melting season. David Vaughan of the *British Antarctic Survey* said the ice shelves have been in retreat for 50 years, but those losses totaled about 7,000 km² (4,200 mi²). He said further that, "To have retreats totaling 3,000 km² in a single year is clearly an escalation". Satellite views of the glaciers are available at: http://www-nsidc.colorado.edu/NSIDC/ICESHELVES/lars_wilk_news

Meanwhile, syndicated columnist Mitzi Perdue reports on a *Loyola University* at Chicago study that examined the effects of higher carbon dioxide (CO₂) levels on plant growth. A group of aspen trees exposed to CO₂ at levels expected in the year 2050 grew moderately faster than trees grown under today's atmospheric conditions. But the leaves from trees that grew in the carbon-rich atmosphere contained less nitrogen, which "translates into lower protein content," and more phenols, chemicals that can be toxic to animals.

Sources: Seth Borenstein, *Philadelphia Inquirer*, 4/20/99; Mark Jaffe, *Philadelphia Inquirer*, 5/3/99; *New Scientist*, 5/1/99; Simon Benson, *Daily Telegraph*, 4/29/99; Michael Mansur, *Kansas City Star*, 4/28/99; *Agence France-Presse*, 4/7/99; *Los Angeles Times*, 4/8/99; Michael Woods, *Pittsburgh Post-Gazette*, 4/26/99; *Nando.net*, 4/6/99; William Souder, *Washington Post*, 4/15/99; Thomas R. O'Donnell, *Des Moines Register*, 5/4/99; and *National Journal's GREENWIRE, The Environmental News Daily*, 4/8, 4/9, 4/15, 4/20, 4/26, 4/29, 5/3/99.

Miscellaneous River Issues

USEPA Supports Tribal Water Regulations: A federal judge has dismissed Wisconsin's attempt to block the Chippewa tribe from setting water quality rules on their reservation near a proposed underground mine site at Crandon. The State had

challenged the US EPA's decision to grant the tribe sovereignty over administering the Clean Water Act on its lands. U.S. District Judge Charles N. Clevert upheld the EPA's ruling, aiding the Chippewa's battle to protect its rice beds from potential mine runoff. *Nicolet Minerals Co.*, the firm proposing to build the mine, says it would prefer to have the state, rather than the tribe, regulate water standards. Sources: *St. Paul Pioneer-Press*, 5/5/99 and *National Journal's GREENWIRE, The Environmental News Daily*, 5/14/96 and 5/5/99

Alabama Sturgeon Proposed for Listing:

The U.S. Fish and Wildlife Service (USFWS) on 3/23 proposed adding the Alabama sturgeon to the endangered species list, "risking the renewal of a political firestorm." A similar proposal in 1993 touched off an 18-month battle between the government and Alabama lawmakers, who argued that protection would shut down Alabama's waterways and cost the state billions of dollars in economic losses. The government eventually withdrew that proposal, saying the species may already be extinct. But since that time, fishers have caught at least six Alabama sturgeon. And recent studies by the USFWS and the Army Corps of Engineers have concluded that listing the fish as endangered will not affect activities in the Alabama and Tombigbee rivers, said Sam Hamilton, USFWS southeast regional director. But Bill Satterfield, who helped lead the fight against the 1993 listing said, "We don't think there's anything to gain by the listing re-proposal", so the USFWS is likely in for another fight. Sources: David Pace, *AP/Birmingham News* online, 3/24/99; Motoko Rich, *Wall Street Journal* [Southeast edition], 3/24/99; and *National Journal's GREENWIRE, The Environmental News Daily*, 3/25/99

Decision on Property Values Pollution: A Massachusetts court judgment could create a precedent for holding polluters liable for the loss of value of their neighbor's property. An Essex County Superior Court jury ruled in April that the *Bass River Tennis Club* should get \$2.3 million as compensation for a decline in the club's land value caused by groundwater pollution. The club alleges the pollution seeped downhill from *Varian Associates*' former radar component factory. A second trial later this summer will determine whether to hold *Varian* liable for the damages. Some lawyers say the judgment could "encourage similarly large claims in other suits" based on lost resale value. Sources: Peter J. Howe, *Boston*

Globe, 5/3/99 and *National Journal's GREENWIRE, The Environmental News Daily*, 5/3/99

Save Louisiana Wetlands: On 4/26, Louisiana Dept. of Natural Resources Secretary Jack Caldwell unveiled the "Save LA Wetlands" campaign, a nationwide series of public service announcements "to broaden public awareness of Louisiana's devastating coastal wetlands losses". Sources: *Louisiana DNR release*, 4/26/99 and *National Journal's GREENWIRE, The Environmental News Daily*, 4/29/99

Hudson River PCB Study: New York state health officials are soliciting volunteers from two communities along the Hudson River for a study of the effects of PCBs on humans. Sources: Joel Stashenko, *AP/Albany Times Union*, 4/25/99 and *National Journal's GREENWIRE, The Environmental News Daily*, 4/27/99

North Carolina "Outhouse" Program: Aiming to combat environmental and health problems surrounding the use of outhouses, North Carolina is launching a first-of-its-kind program to connect all residents to septic tanks or sewer systems. The initiative, called the *Small Town Environment Program*, allots \$250,000 in federal grants to each county to upgrade as many homes as possible. The program aims to eliminate "straight-piping", the illegal practice of diverting raw waste directly into waterways. The Department of Agriculture has promised more than \$200 million for clean water improvements in rural areas of 44 states and Puerto Rico. About \$155 million would come in the form of USDA loans and grants, with the remainder provided by other public and private sources. The money will primarily pay for improvements to substandard wastewater systems. Across the U.S. according 1990 census data, more than 1.1 million homes lack adequate indoor plumbing. Sources: Sue Anne Pressley, *Washington Post*, 4/25/99; *AP/San Francisco Chronicle/Examiner* online, 4/23/99; and *National Journal's GREENWIRE, The Environmental News Daily*, 4/23 and 4/26/99

Western Lands Access Problem: A growing number of "those who can afford a slice of the Rockies" in Montana are finding "that they can have exclusive or near exclusive access" to government-owned wilderness areas by locking the public out, the *New York Times* reports. Many people from out of state buy land that includes roads and trails "long used by the natives"

to gain access to public lands. But the new landowners aren't happy with the public's right of access through their private ranches, resulting in more incidents where private landowners close trails or roads. *CNN* founder Ted Turner has even been accused of using armed security guards to deny legal access to public areas. For longtime residents, "the closures trend represents the erosion not just of access but of an established way of life". Sources: Jim Robbins, 4/26/99, *New York Times*; and National Journal's GREENWIRE, *The Environmental News Daily*, 4/26/99

Alabama Construction-site Runoff

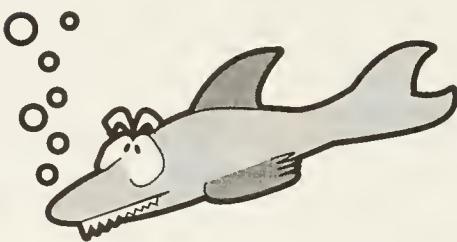
Program: A state-federal task force has begun discussing ways to train police in 11 Alabama cities and two counties to look for construction-site runoff, "a growing source of pollution in Alabama's coastal waters." The *Gulf Coast Civil Environmental Task Force* plans to have the "runoff patrol" trained by summer to "scour subdivisions and other developments in burgeoning coastal communities" for construction site violations, such as improperly installed fences that fail to prevent silt and other pollutants from washing into Mobile Bay. Violators could face federal lawsuits to stop their projects or be hit with criminal charges. Source: Jennifer Ordonez, *Wall Street Journal* online [Southeast edition], 4/21/99

WV Logging Lawsuit: Two environmental groups are suing to prevent *Allegheny Wood Products* from logging in West Virginia's Blackwater Canyon. Plaintiffs *Heartwood Inc.* and the *West Virginia Highlands Conservancy* say the timber company has not developed plans to protect threatened and endangered species at the site and has violated the Endangered Species Act while logging 1,600 acres in the canyon. Also named as plaintiffs are four threatened species found in the canyon: the Virginia northern flying squirrel, Cheat Mountain salamander, Indiana bat and Virginia big-eared bat. In February, the *Sierra Club* agreed not to sue *Allegheny Wood* after the company agreed to work with the U.S. Fish and Wildlife Service to protect threatened species at sites it was already logging. An *Allegheny Wood* contractor has since filed papers to log a separate section of the canyon. Sources: Ken Ward, *Charleston [WV] Gazette*, 4/16/99; AP/Charleston [WV] Daily Mail, 4/16/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 2/24 and 4/19/99

KY Strip Mining Agreement: Environ-

mentalists and coal companies reached an agreement in early May to halt further strip mining and logging near the top of Black Mountain. The tentative deal requires sustainable forestry practices between altitudes of 3,000 and 3,600 feet. Sources: Lance Williams, *Lexington Herald-Leader*, 5/4/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 5/6/99

Ballast Water Controls: The federal *Aquatic Nuisance Species Task Force* announced in late April that it wants to accelerate efforts to prevent non-native aquatic species from entering U.S. harbors through ballast water pumped from ships. The task force, jointly chaired by the National Oceanic and Atmospheric Administration and U.S. Fish and Wildlife Service, passed a resolution calling for the elimination "as soon as possible" of ballast water "as a significant pathway for the introduction of invasive species into American waters" and increased efforts to find



"effective and safe" solutions to ballast water management. In a *Journal of Commerce* op-ed, (5/3/99) attorney Sean Connaughton writes that various efforts underway at federal and state levels to combat the "threat of foreign invasion from ... non-indigenous aquatic species" must be "viewed with great alarm." Connaughton said that some of the "haphazard" measures being considered by the US EPA and the California State Assembly have the potential to cost the shipping industry "billions of dollars in liability for ballast water discharges". Sources: *NOAA release*, 4/30/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 5/3/99

Artificial Marshes Popular: Governments "around the globe" are creating man-made marshes in increasing numbers to "purify the fouled water of growing urban populations." Artificial wetlands can be an alternative to high-tech water purifying systems since they are cheaper to build and can serve multiple functions, including flood control and wildlife preservation. Partially-treated wastewater and storm runoff are collected in ponds, where plants

and microbes purify them of silt and some pollutants. The water can then be reused for farming and other non-drinking purposes. Sources: Robert Jablon, *AP/Sacramento Bee*, 5/4/99; National Journal's GREENWIRE, *The Environmental News Daily*, 5/7/99

Grazing Issues: Livestock and public lands groups from four Western states filed a lawsuit on 4/14 to stop a new Bureau of Land Management (BLM) grazing policy. The groups charge that the policy, which is scheduled to take effect in June, would eliminate grazing permits on public lands if the BLM has not completed its environmental review. Under the BLM policy, the groups say, permits would in effect be eliminated whenever they are transferred or renewed while the agency decides whether to make any changes to the permits. Frank Falen, an attorney for the plaintiffs said, "We are not opposed to environmental review of the grazing program and any change of the terms and conditions of the permit. But we do not want the people we represent and their livelihood terminated just because the BLM has not done an environmental analysis". Meanwhile, the Idaho Supreme Court ruled in early April that it is unconstitutional for the state land board to give preference to ranchers when determining who may bid for grazing leases on state lands. Since 1993, the *Idaho Watersheds Project*, which seeks to protect streamside areas, has repeatedly outbid ranchers for the leases only to have the land board overturn the successful bids. Sources: *AP/Salt Lake Tribune/others*, 4/16/99; *AP/Idaho Falls Post Register*, 4/4/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 4/8 and 4/16/99

CITES Caviar Smuggling Case Made: The first criminal prosecution of caviar smuggling has been made against three couriers caught smuggling endangered sturgeon caviar from Poland to New York. Twenty-seven species of sturgeon are protected internationally under the CITES pact. U.S. Fish and Wildlife investigators say the 12/98 case should "serve as a wake-up call for all importers still doing business in the caviar black market." But USFWS officials say, "despite international treaties, tougher U.S. enforcement of import rules and renewed Russian promises of a crackdown on the poachers, the caviar black market is no more likely to be eliminated than the drug cartels.". Sources: Rempel/Kistner, *Los Angeles Times*, 4/8/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 12/21/98 and 4/

James River (VA) Fishway: On 4/20 conservationists and state and local officials dedicated the "long-awaited" Boshers Dam Fishway, a concrete ladder of baffles that will allow fish to reach hundreds of miles of traditional spawning grounds on the James River for the first time in nearly 200 years. Sources: Wes Allison, *Richmond Times-Dispatch*, 4/21/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 4/22/99

UMR Lock Expansion Pushed: An alliance of farm industries and St. Louis-based barge interests is pushing for \$1 billion in new lock-and-dam construction on the upper Mississippi and Illinois rivers, "defying" preliminary US Army Corps of Engineers findings that say such construction won't be needed for about 25 years. The industries say the new projects are needed to "assure smooth exports of grain well into the next century." Missouri representatives are expected to introduce legislation in Congress calling for doubling the size of seven locks, five on the Upper Mississippi River. But the Corps, in the middle of a \$50 million study of river navigation, has already concluded that grain exports won't increase enough to justify expansion of the five locks until 2023. Environmentalists argue that the new construction could damage wildlife habitat, along with fishing and hunting, because of an increase in sediment deposits in side channels. Rick Moore of the *Mississippi River Project* said, "Expanding five locks could double barge traffic on the Mississippi River, potentially doubling truck traffic in riverside communities and accelerating the loss of habitat for river wildlife ... This would be the final nail in Old Man River's coffin". Sources: Bill Lambrecht, *St. Louis Post Dispatch*, 3/23/99; *US Newswire*, 3/19/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 3/24/99

Yellowstone Bioprospecting Film: The Dept. of Interior unspooled a new promotional film for Yellowstone National Park that also touts proposed public-private ventures in bioprospecting microbial life from the park's thermal features. Former *CBS News* anchor Walter Cronkite narrates "Yellowstone Revealed", which features music by Chip Davis and *Mannheim Steamroller*. Asked if it was appropriate for the National Park Service (NPS) to engage in profit-sharing ventures in bioprospecting, Cronkite said the amounts of microbes taken amount to little

more than samples and do not pose the type of impact mining or logging in park boundaries pose. Cronkite said, "I believe it is entirely appropriate." The NPS signed a contract in 8/97 with San Diego-based *Diversa Corp.* to share profits from the commercialization of microbial life in the park's geysers and springs. But in March, a federal judge ordered a temporary halt to the precedent-setting deal pending an environmental impact statement. The NPS is conducting the review and appealing the judge's decision, and hopes to eventually sign more agreements with other firms. Source: National Journal's GREENWIRE, *The Environmental News Daily*, 3/26 and 5/7/99

Zebra Mussels Found on the Missouri River: Zebra mussels have been found at a power station near Sioux City, IA, presenting the first evidence (4/12/99) that the species, native to the Caspian Sea area, has invaded the Missouri River. The discovery marks the first westward expansion of the mussel's range in two years. Officials were expecting to find the mussels eventually, as they have already spread through much of the Great Lakes and the Ohio and Mississippi rivers. Some power plants along the Missouri have installed chemical treatment systems to combat the mussels. Many biologists believe that zebra mussels have been spread largely by barge traffic. Sources: Julie Anderson, *Omaha World-Herald*, 4/24/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 2/24 and 4/26/99



Model Public/Private Refuge Partnership: State and federal officials are hailing a private-public linking of wildlife refuges on the Rappahannock River in Virginia as a conservation model for the U.S. The overall effort involves private conservation groups, which have gathered more than 2,700 acres of wildlife-rich property. The refuge will consist of multiple sites strung for miles along the tidal river "like a string of pearls," said Assistant U.S. Secretary for Fish and Wildlife Don Berry. This concept was pioneered on the Missouri River after the great Midwest floods of 1993, and is being implemented there by state and federal agencies through development of state lands and the Big Muddy National Fish and Wildlife Refuge. Source: Lawrence Latane III, *Richmond Times-Dispatch*, 5/12/99 and

National Journal's GREENWIRE, *The Environmental News Daily*, 5/12/99

Montana Mining Agreement/Lawsuits: Two Montana interest groups and *Stillwater Mining Co.* are in "precedent-setting" talks to come up with a "good neighbor" policy that legally binds the company to measures that protect the public and environment "beyond what the company's operating permits require." If the talks are successful, they could make moot a lawsuit filed by the two groups (*Stillwater Protective Association* and *Cottonwood Resource Council*) against the state Dept. of Environmental Quality over its approval of a permit for *Stillwater Mining* to expand its operations near Nye. Though *Stillwater Mining* is not named in the suit, company VP Chris Allen said it would like to come to an agreement. Meanwhile *Atlantic Richfield Co. (Arco)* will pay \$260 million to the state of Montana, the federal government and Indian tribes under a settlement approved on 4/19 by a federal judge in Great Falls. The case ends 16 years of court battles brought by the state over pollution in the Upper Clarks Fork River Basin from mining and smelter operations in Butte and Anaconda, MT. The settlement provides \$215 million to the state plus interest that has been accruing since 4/98; \$18.3 million for the Confederated Salish and Kootenai Tribes; and \$26.7 million for various federal agencies. The 130 mile-long stretch from the headwaters of Clarks Fork River is the largest Superfund cleanup site in the nation. Arco inherited the problems in the 1970s after it acquired the *Anaconda Co.* Sources: Dan Burkhardt, *Billings Gazette*, 4/24/99; *AP/Billings Gazette*, 4/21/99; *Baltimore Sun*, 4/21/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 3/19, 4/21 and 4/27/99

Electric Contaminant Cleanup: Researchers have successfully tested a method for cleaning up contaminated industrial sites that uses electric currents running through the soil. The method, developed by *Monsanto*, *General Electric* and *Du Pont* researchers, uses layers of electrodes buried up to 45 ft. underground that attract water laced with trichloroethylene (TCL). The water then is filtered into treatment zones where the TCL is dechlorinated. The technique should be less expensive than traditional treatment techniques because cleanup can be done at the site and treated areas can be left in place after treatment. Sources: *New York Times*, 4/6/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 4/9/99

Airboats Damaging Parks: A draft assessment by the National Park Service of airboat tours in Big Cypress National Preserve concludes "that airboats are killing mangrove trees along their trails, degrading marshes with deep ruts, interfering with wildlife and making it impossible for other boaters or canoeists to use the waterways". While the report recommends allowing the tours to continue, it proposes new rules to limit environmental damage and restricted operating times to allow other boaters to use the public waterways. Sources: Cyril T. Zaneski, *Miami Herald*, 5/10/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 10/30/95 and 5/10/99

NY Land Use Settlement: The New York State Adirondack Park Agency and Connecticut-based *Champion International Corp.* have agreed to a \$1 million settlement over land-use violations, clearing the way for the largest public land-acquisition deal in state history. *Champion* agreed to pay a fine for its Adirondack seasonal homes that were too large, too close to waterways or had illegal septic systems. In addition, the company will pay \$350,000 for local environmental benefit projects and a \$500,000 performance bond to ensure the homes are brought into compliance. The agreement clears the way for a deal negotiated in 12/98 to preserve nearly 143,000 acres in New York currently owned by *Champion* that will be managed partly for timber and primarily for recreation and conservation. Environmentalists, who had urged the state to correct the violations, praised the deal. Dan Fitts of the *Adirondack Council* said, "This provides for a healthy forest products industry to grow and thrive and allows for recreational opportunities. Sources: Lara Jakes, *Albany Times Union*, 5/6/99; Jennifer Jordan, *AP/Boston Globe* online, 5/5/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 12/10/98 and 5/6/99

WV Ohio River Fish Consumption Advisory: The state divisions of Environmental Protection and Natural Resources (DEP) and the Bureau for Public Health have extended a consumption advisory for several species of fish caught in the Ohio River. Meanwhile, a state environmental appeals board has upheld a DEP decision that denied future pollution discharges into the Blackwater River. Sources: *Charleston (WV) Gazette*, 3/31/99; *USA Today*, 3/31/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 4/1/99

Frog Deformities

Two studies published in the 4/30 issue of the journal *Science*, focusing on Pacific tree frogs in California, say that a "simple parasitic flatworm" may be to blame for deformities in frogs in the Western U.S. Researchers found that trematodes burrow into a tadpole's developing limbs, and the infestation can cause deformed and multiple limbs such as seen elsewhere in the U.S.



Other researchers have said that deformities in frogs could be caused by environmental pollutants or depleting ozone levels, and that the effect on frogs could be "an early warning of much more widespread malformations to come in other species". Jim Burkhardt of the *National Institute of Environmental Health Sciences* said his group is looking into deformities in Minnesota and has "narrowed its investigation to a handful of chemical contaminants ... shown to cause limb defects in the lab".

Meanwhile, researchers at the *University of Arizona* have identified at least six sites in that state where the chytrid skin fungus is killing off native frogs. Frogs involved in die-offs include the lowland leopard frog, Chiricahua leopard frog and canyon tree frog.

Sources: Paul Recer, *AP/San Francisco Chronicle/Examiner* online/others, 4/30/99; Carol Kaesuk Yoon, *New York Times*, 4/30/99; Deborah Schoch, *Los Angeles Times*, 4/30/99; William Souder, *Washington Post*, 4/30/99; Jim Erickson, *Tucson Arizona Daily Star*, 4/30/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 2/25 and 4/30/99

Power Plants Contaminating Fish?

A new *Izaak Walton League of America* report, released on 5/12 blames coal-burning power plants in the Great Lakes states for the mercury contamination that has led states to advise against eating locally caught fish. It recommends that area states, including Wisconsin, Minnesota and

Michigan, should impose stronger laws to reduce mercury emissions and conserve energy to avoid burning coal. Dave Michaud, a scientist for *Wisconsin Electric Power Co.*, immediately disputed the study, saying that "the form of mercury emitted from power plants may not be the type that taints fish". He suggested that "geological formations" could be a more potent source of mercury contamination.

Minnesota Gov. Jesse Ventura's (Reform) administration seems to favor the regional approach. Karen Studders, commissioner of the state's Pollution Control Agency, said she hopes regional efforts will lead to "a national effort." Scientists say as much as 90% of the mercury falling into Minnesota lakes and rivers may come from outside the state. Minnesota legislators are about to pass a bill that would set a voluntary goal to reduce mercury emissions in the state by 70% by 2005, based on 1990 levels.

Sources: Tom Vanden Brook, *Milwaukee Journal Sentinel*, 5/13/99; John Meyers, *Duluth News-Tribune*, 5/13/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 5/13/99

Microbe Threats

People who got sick from *Pfiesteria piscicida* once may be more vulnerable to the toxic microbe even at lower levels of exposure, according to preliminary results of a study conducted by *University of Maryland* neurologist Lynn Grattan. A "handful" of Maryland residents who were "probably" exposed to *Pfiesteria* in both 1997 and 1998 appeared to suffer "mild to moderate" short-term memory loss after their second round of exposure. The microbe was found at levels high enough to kill fish in 1997 but at much lower levels in 1998.

The study is the first to show that some Marylanders got sick from *Pfiesteria* last year, and the findings could pose problems for state health officials, who must determine when to close waterways. *Pfiesteria* appeared at low levels in the Wicomico and Chicamacomico rivers last year, but because the outbreaks were not serious enough to kill fish, the rivers were presumed safe for people. The Maryland Dept. of Health and Mental Hygiene and Dept. of Natural Resources (DNR) are reviewing their criteria for closing rivers, and John Surrick of the DNR said the agencies will "be taking a look" at all of the new information.

Meanwhile a report issued by the *American Society of Microbiology* (ASM) says that water pollution rules, which focus mainly on chemical sources, have overshadowed the threat from microbes such as viruses and bacteria. The report said that "microbial pollutants in water," such as *E. coli*, *cryptosporidium*, *giardia*, *hepatitis A* and *Pfiesteria*, "pose far greater risks to communities." The practice of pumping human waste into water bodies, or letting them filter into groundwater, is responsible for "much of the contamination." ASM said that US EPA drinking water standards put limits on 70 chemicals, but only one microbe, coliform bacteria. Agencies, universities and industries involved in water safety should coordinate their efforts to reduce the "current state of fragmentation and inaction," ASM said.

Sources: Heather Dewar, *Baltimore Sun*, 3/26/99; Maggie Fox, *Reuters/PlanetArk*, 4/29/99; and National Journal's *GREENWIRE, The Environmental News Daily*, 3/26 and 4/29/99

Pesticide Risks Higher

The environmental and human health consequences of widespread pesticide use have been underestimated, according to several new studies of the effects of pesticide exposure. Research in a recent issue of *Toxicology and Industrial Health* by a multidisciplinary group of scientists demonstrates that methods used by the chemical industry and the US EPA to determine safe exposure levels for pesticides have failed to reveal "less obvious, and perhaps delayed, effects on wildlife and human populations," according to a statement from a research work session.

EPA studies indicate that some commonly used pesticides are antiandrogens, which block the male hormone system and cause reproductive abnormalities. These effects "uncover a whole new class of endocrine disrupters" that have previously been overlooked, the journal reports. And several pesticide ingredients that were believed to be inert are demonstrated to have hormone-disruptive effects.

The EPA found that a DDT substitute and a fungicide can produce "subtle alterations" at doses below that previously believed to be safe. The EPA concluded that there may be no safe exposure level for these chemicals. Other studies also found that commonly used test methods were insufficient to

predict human and ecological effects. And one study found indications that even at undetectable levels, a new class of herbicides can harm non-targeted plants, "raising concerns about biodiversity."

Environmental and health effects from pesticides are reported by the journal to range from brain damage in children exposed in utero to long-term effects on the sex ratios of certain species. The researchers conclude that "the majority of the adverse health effects in wildlife from exposure to pesticides are not observed," and therefore, "the full extent of the risk to wildlife and human health ... is poorly understood."

The studies were produced or assembled by a group of 23 scientists who met in 1996 to discuss pesticide risks. The group states that exposure to pesticides and risk of harm from them are both "greater than most people realize." It urges the development of better screening methods for new chemicals, as well as "wiser use and reduced reliance" on pesticides.

Source: National Journal's *GREENWIRE, The Environmental News Daily*, 3/15 and 3/24/99

Lead Sinker Ban

Five years after first proposed, the push for a ban on lead fishing tackle is making a quiet comeback. When the nationwide ban was first proposed in 1994 the US EPA based its position on the lead-poisoning death of several shorebirds that ingested lost sinkers. The sportfishing community and tackle manufacturers fought the issue, and the EPA proposal was poorly put together because it overblew the risk associated with lead tackle, said Mike Nussbaum, vice president for government services with the *American Sportfishing Association*. "We've never been opposed to a ban, but what we've always said is, 'Show us the evidence. Show us proof that we have a legitimate lead problem resulting from fishing sinkers lost by anglers, and we'll be happy to respond.' "

The EPA could not do that, and the proposal was rejected. But where the EPA failed, the state of New Hampshire and the U.S. Fish & Wildlife Service (FWS) are succeeding. Last June, New Hampshire passed a ban on small lead sinkers and jigs that will take effect on 1/1/00. The ban applies only to freshwater lakes and ponds, not streams or

rivers, and only to sinkers less than an ounce or jigs less than an inch long. State officials determined that 11 common loons died of lead poisoning in 1997. That's 2% of the state's estimated loon population of 576.

Loons ingest lost sinkers along with the small stones and grit they swallow to aid in digestion. A single sinker can kill a loon. Last month, the FWS announced a plan to establish lead-free fishing at selected national wildlife refuges. The FWS plan would involve a phased-in ban of lead tackle on refuges where waters are used frequently by both anglers and loons. FWS spokesman Eric Eckl said the proposal has attracted "surprisingly little attention."

"National wildlife refuges are where wildlife comes first, so they are held to a higher standard," Eckl said. "We do have scientific evidence that lead sinkers in limited areas can be a real problem." But Eckl said there is not enough evidence to support another attempt at a nationwide ban. It is difficult to document why birds die. Birds weakened by lead poisoning crawl off and hide, and raccoons or other scavengers often make quick work of the carcasses.

Nussman points out a big difference between banning lead fishing tackle and the nationwide ban on lead shot pellets, which was enacted in phases from the late 1970s to the early 1990s. "Anglers do not go out with the purpose of losing lead sinkers," Nussman said. "Are some lost? Sure, some are. But it's not like lead shot, where to participate in the sport lead had to be spewed out over the water."

As with shot pellets, there are safe substitutes for lead sinkers. Manufacturers sell steel, tin and brass-composite products, often at a slightly higher cost. It's hard to tell where the lead-sinker issue is headed. Nussman said several other Northeastern states likely will attempt bans based on damage to loons.

Source: Ken Gordon, *The Columbus (OH) Dispatch*, 5/16/99

New Property Rights Legislation

Private property rights continue to be a major issue in Washington, and Congressional Republicans are leading the charge to cushion the impact of the Endangered Species Act (ESA) and other federal laws and regulations on private landowners - this time by requiring that the government pay

landowners who are forced to keep their land dormant because of the ESA.

The *Landowners Equal Treatment Act of 1999* (H.R. 1142) written by Rep. Don Young, (R/AK), and cosponsored by more than 25 House Republicans, equates the ESA's impact on private land to a "taking" of the land for public use. The measure would prevent the government from such a "taking" unless it (1) obtains landowner permission, (2) negotiates an agreement or (3) pays compensation. Critics say the bill could be applied so broadly that it would require federal agencies to spend most of their budgets paying compensation to landowners instead of for species protections.

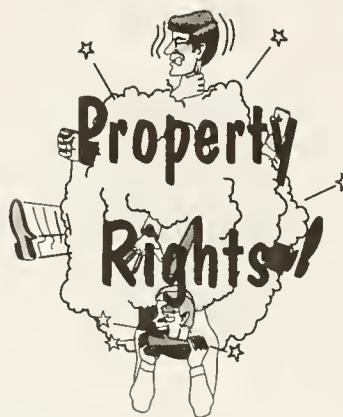
The *American Farm Bureau Federation* (AFBF) supports the act. But Steven J. Shimberg of the *National Wildlife Federation* says the bill would be a "raids on the treasury" and would "essentially repeal the ESA's application to private property ... unless developers were paid to obey." Young and his allies have been trying rigorously in recent Congresses to get the ESA off the backs of private landowners. But environmentalists expect this most recent bill to meet with the same kind of failure as his other recent efforts. They say Democrats and moderate Republicans are reticent to support any proposal that would make the publicly popular ESA more difficult to enforce.

Young cites the Constitution as the basis for his proposal. He points out that the 5th Amendment states in part that "nor shall private property be taken for public use, without just compensation." On introducing the Bill he said, "It just makes sense that if the government forces you to make your property into a federal wildlife refuge, then you should be compensated." But the Clinton Administration has threatened a veto. The Young bill goes far beyond what the courts have upheld as a "taking" under the Constitution, Jamie Rappaport Clark, director of the U.S. Fish and Wildlife Service (FWS), said in testimony at a 4/14 hearing before the House Resources Committee (HRC), which Young chairs.

Bill Snape, legal director of *Defenders of Wildlife* said there is support for modest ESA reforms, such as deferring estate taxes for private landowners who take actions to help endangered species. But he said Young's bill goes too far.

Still, some private landowners are happy for

the effort. Dave Pechan, a grape grower near Stockton, CA, still gets angry when he recalls a 1997 threat that he said the FWS made. He said agency officials talked of not allowing him to plant a vineyard on his 40 acres because it might hurt the fairy shrimp. But Pechan, who had already received permission from the Agriculture Department for the vineyard, continued with his project. The FWS never followed through on its threat. Still, he said, the ESA has "placed a real chill, I think, in this area of California. ... I see this as purely a government control thing over the rights of private property owners."



Nancie Marzulla, president of the group *Defenders of Property Rights*, told the HRC on 4/14 of a retired builder in suburban Washington, D.C., who has been kept from building a home on a small lot unless he takes steps to help protect an eagle nest located on a neighbor's property. "The property owner is really a sitting duck, so to speak," Marzulla said later in an interview. "This bill would really level the playing field."

Elizabeth Megginson, chief counsel for the HRC, said many private landowners are hesitant to pursue their rights in court because cases drag on for a decade and can cost landowners more than \$500,000. "The government fights them every step of the way," she said.

On the other hand, environmentalists say that Republicans and many private landowners mistakenly believe that just because they have private land, they are exempt from the type of regulations that govern everything from automobiles to food production - all for the public good. "These landowners are not sovereign nations," said Leona Klippstein, conservation program director of *Spirit of the Sage Council* in Pasadena, CA. "There are environmental regulations to protect our natural resources and to uphold the public trust."

Meanwhile, the Clinton Administration contends that it has already made the ESA more landowner friendly through the expanded use of habitat conservation plans, (HCPs). These plans allow private landowners to harm a species or species habitat in return for taking action to help the species long-term, such as setting aside land elsewhere for habitat. After having just 14 HCPs on the books in 1992, there are now more than 240, largely because the administration has included guarantees that they will be in place for decades or more.

On another private lands vs public use front, the *Columbia River (OR) Gorge Commission* has ordered a Prindle, WA, couple to move their house 200 ft. to make it less visible from the surrounding countryside. The action has become a "major test" of a federal law requiring structures to be "visually subordinate to its landscape setting." Jody and Brian Bea, aided by the Sacramento-based property-rights group *Pacific Legal Foundation*, are suing the commission, saying the law is "unconstitutionally vague." The commission said the couple failed to maintain adequate vegetation on the property as promised in the house's architectural plans. Other area homeowners called the Beas' 4,000 ft² house an "obscene gesture" and said they have been able to build homes that blend well with the landscape. Kevin Gorman, executive director of Portland-based *Friends of the Columbia Gorge*, "maintains that the Beas' house is such a clear violation of the law that allowing it to stand as is would 'send a terrible message.'"

On yet another front, private property and tax groups are combining forces to try to block attempts to approve permanent funding for federal land purchases, saying that two billion-dollar land conservation bills are "a direct attempt by the left to buy Republican" districts. The bills in question are H.R. 701 and 798, introduced respectively by HRC chair Don Young (R/AK) and Ranking Member George Miller (D/A). Young and Miller say they have "widespread support" for the bills, but would be willing to address opponents' concerns. The competing bills would spend federal money from offshore oil development to buy and restore federal lands and help endangered species recover. In part, the two bills would help to fund the *Teaming With Wildlife* proposal, discussed in past issues of *River Crossings*.

American Land Rights Association (ALRA) Director Chuck Cushman said if either of

the two bills were to pass, "no landowner would be safe." He said further, "The Park Service, Forest Service, Fish and Wildlife Service and [Bureau of Land Management] will once again become the extreme tyrants of the past". But Daniel Beard of the *National Audubon Society* (NAS) said that each bill "can chart the course for conservation into the next century." In a letter to Young, Beard said, "We look forward to working with you to craft the best legislation possible to provide permanent funding for protecting our environment".

Meanwhile, Sen. Craig Thomas (R/WY) has introduced legislation to keep the federal government from acquiring more land. The bill (S. 826) would apply in states where 25% or more of the land is federally owned and would require the government to sell off land as it acquired other private lands. Thomas says federal agencies continue to acquire "vast amounts of land in the West," creating problems for local economies and "spread[ing] thin" federal agencies that manage the land.

Finally, in a *Wall Street Journal* op-ed (4/26), James V. DeLong, of the Washington, DC-based *Competitive Enterprise Institute*, says property rights is becoming "a significant issue of business law." Governments are becoming "eager to assert control of key assets" and businesses are fighting to keep control of their property.

And so it goes...

Sources: John Hughes, *Associated Press Newswires*, 4/24/99; Brody Mullins, *Congress Daily*, 3/9/99; David Whitney, *Anchorage Daily News*, 3/10/99; ALRA release, 3/9/99; NAS release, 3/9/99; John Hughes, *AP/Anchorage Daily News*, 4/26/99; AFBF release, 4/14/99; NWF release, 4/14/99; AP/Casper [WY] *Star-Tribune*, 4/26/99; Sam Howe Verhovek, *New York Times*, 4/24/99; and National Journal's *GREENWIRE*, *The Environmental News Daily*, 2/24, 3/10 and 4/26/99

Environmental Education and Economics

The *Political Economy Research Center* (PERC) has come out with a new book intended to fill "a critical void in the field of environmental education." PERC said *A Blueprint for Environmental Education* "offers a road map for introducing economics to environmental education." The book

is a collection of essays by educators and economists "who point out current problems with environmental education, introduce economics as a solution, and illustrate the relevance of economics." Some of the essays look at market approaches to environmental problems and reform of environmental education.

Some parents, scholars, and environmentalists have objected to the "doomsday tone" of some material being used to teach students about the environment. A report by the DC-based *Capital Research Center* on environmental education developments since the 1970s cites a study by the *Independent Commission on Environmental Education* that found many sources used in environmental education programs "simply ignored or mis-stated the most important and interesting scientific questions at the heart of an education about the environment"

Sources: PERC release, 3/99; *Capitol NewsWire*, 3/24/99; Matthew Brown, CRC, 3/99; National Journal's *GREENWIRE*, *The Environmental News Daily*, 3/26/99

Grassroots Groups Lead Environmental Efforts

Declaring a new "age of the little guy", *Outside* magazine examines "emerging grassroots efforts" that are generating national attention. No longer do the large national organizations "have the juice," the monthly declares. Local activists have scored many of the environmental successes of recent years, each through distinct tactics.

One is a "good cop" approach exemplified by the coalition building and letter writing of activist Gene Sentz, a fourth-grade teacher who was the "driving force" behind U.S. Forest Service Chief Mike Dombeck's 2/99 decision to ban new mining claims in Montana. "Rather than preaching to the green choir," coalition builders like Sentz go to the *Rotary Club* and churches to build support.

"Bad-cop tactics have their place as well," the magazine declares. The *Southwest Center for Biological Diversity*, the "undisputed master" of the "legal train wreck" approach, has filed more than 100 Endangered Species Act lawsuits and won 82% of them. One of its higher profile efforts involved the San Pedro River near the Mexican border. In that effort, the

Tucson-based group sued the U.S. Fish and Wildlife Service several times to force it to protect the river from a U.S. army facility and nearby town that were "basically sucking dry the aquifer" under the river.

Sources: John Skow, *Outside*, 4/99; National Journal's *GREENWIRE*, *The Environmental News Daily*, 4/10/98, 10/16/98; 2/4 and 4/8/99

Religion and the Environment

"Religious-based environmentalism" may be returning the green movement to its "original spiritual roots," as more religious groups across the country make environmental activism a "top-priority concern." The movement encourages a new interpretation of religious teachings and emphasizes "Creation care" -- the assuming of a "significant responsibility for God's creations," according to John Carr of the *U.S. Catholic Conference*.

The *Sierra Club*'s Carl Pope applauds the "power that organized religion can bring to our mission." And some have taken the creed to protect the planet personally. Peter Kreitler, an Episcopal priest who founded the Santa Monica, CA-based environmental group *Earth Services*, resigned from his parish to work full-time on the environment and sell organic fertilizer, "the most important theological work I've ever done." Kreitler said, "When God commands: 'Peter, preserve creation,' what can be more elementary than becoming a fertilizer salesman?". And the movement may encourage some religious institutions, rich in land holdings but cash-poor, to choose environmental buyers when selling off valuable open lands they have held for decades. *Trust for Public Land* president Will Rogers said, "Church land is often the last remaining property of its kind in a community".

In a bid to halt the rampant destruction of America's remaining forests, religious leaders came to Washington, D.C. in February, to call for an end to commercial logging in national forests. The Santa Rosa, CA-based *Religious Campaign for Forest Conservation*'s (RCFC) first lobbying effort culminated on 2/3 in a meeting with White House Council of Environmental Quality staff. Earlier in the week, the RCFC urged Interior Secretary Bruce Babbitt, U.S. Forest Service Chief Mike Dombeck and members of Congress to redirect timber subsidies to communities for ecological restoration

projects and worker retraining. The group also demanded a stop to all logging in old-growth forests. The 50 Christian and Jewish leaders say they see a clear spiritual obligation to preserve the nation's forests and forest ecosystems. RCFC chair Reverend Owen Owens said, "As stewards of the lands that God has given us, we need to make some changes, and we need to make them now."

Meanwhile, environmentalist and Christian groups have sued the US Fish and Wildlife Service (USFWS) and Interior Secretary Bruce Babbitt for "refusing" to designate critical habitat for seven California species listed under the Endangered Species Act. The suit "represents the most significant manifestation to date" of the collaboration between religious and secular environmen-

talists. The groups contend the USFWS has "consistently violated the ESA" by not mapping and designating critical habitat for endangered and threatened species. Species identified as having been "denied" protection are the Alameda whipsnake, arroyo toad, spectacled and Steller's eiders, Morro shoulderband snail, San Bernardino kangaroo rat and the Zayante band-winged grasshopper.

And finally, a representative of the Vatican in February issued a "strong denunciation" against "any type of pollution" of global water resources. Speaking at the 23rd session of the UN Food and Agriculture Organization's Committee on Fisheries (COFI), Archbishop Alois Wagner called for an improvement of the water situation around the world, with priority given to

smaller forms of agriculture and fishing over industrial methods. He emphasized the responsibility of governments to protect waters from contamination and said fishers must have "adequate income, human recognition [and] professional schools"

Some scientists, however, caution that this "trend toward the spiritual" marks the "emergence of an irrational ideology" that is opposed to scientific, industrial and economic progress.

Sources: Teresa Watanabe, *Los Angeles Times*, 12/25/98; Richard Stapleton, *Land & People*, Fall 1998 issue; Glen Martin, *San Francisco Chronicle*, 3/5/99; *ZENIT News Agency*, 2/17/99; and National Journal's *GREENWIRE, The Environmental News Daily*, 5/18/98, 1/4, 2/5, 2/1, 3/5/99

Meetings of Interest

August 2-6: 9th Annual National Gap Analysis Program Meeting, Duluth Entertainment Convention Center, Duluth, MN. Contact: (208) 885-3555 or gap@uidaho.edu

August 6-8: Annual Convention of the North American Native Fishes Association, Jumers Castle Lodge, Champaign-Urbana, IL. Contact: NANFA, 8401 North Lakewood Place, West Terre Haute, IN 47885, (812) 535-4175 or (812) 535-1230.

August 10-12: Missouri River Natural Resources Committee Annual Meeting, Ramkota Inn, Pierre, SD. Contact: Mike Le Valley, USFWS, (712) 642-4121 or mike_levalley@fws.gov.

August 15-20: International Congress on Ecosystem Health, Sacramento Convention Center, Sacramento, CA. Contact: (503) 754-8507 or ehc@ucdavis.edu.

August 29-Sept. 2: 129th Annual Meeting of the American Fisheries Society, Adam's Mark Hotel, Charlotte, NC. Contact:

Betsy Fritz, (301) 897-8616, ext. 212, bfritz@fisheries.org

Sept. 7-9: International Shallow Water Fisheries Sonar Conference, University of Washington, Seattle. Contact: Melanie Milnes, mmilnes@biosonicsinc.com.

Sept. 19-24: International Conference on Diseases of Fish and Shellfish, Rodos Palace Hotel and Conference Centre, Rhodes, Greece. Contact: Maura Hiney, 011/353-91-524411 or nuigalway.ie.

Sept. 21-22: Vegetation of the Upper Mississippi and Illinois River System: Status, Management and Ecological Systems, Radisson Hotel, La Crosse, WI. Contact: Penny Tiedt, UW-La Crosse, La Crosse, WI 54601, (608) 785-6503, FAX (608) 785-8221 or rada@mail.uwlax.edu

Sept. 23-25: International Conference of the Society for Ecological Restoration, Presidio, San Francisco, CA. Contact: SER, 1207 Seminole Highway, Suite B, Madison, WI 53711, (608) 262-9547, (608)

265-8557 or ser@vms2.macc.wisc.edu

Oct. 24-27: 4th Microcomputer Applications in Fish and Wildlife Conference, Caesars Tahoe Hotel, Stateline, NV. Contact: Jeff Trollinger, OFWIM Treasurer, c/o VDGIF, 4010 West Broad St., Richmond, VA 23230-1104, (804) 367-1185 or jtrollinger@dgif.state.va.us

Oct. 27-29: Confronting Uncertainty: Managing Change in Water Resources and Environment Conference. Contact: Yassine Djebbar, (604) 436-6714 or Ydjebbar@gvrd.bc.ca.

Oct. 27-30: Spatial Processes and Management of Fish Populations Symposium, Anchorage, AK. Contact: Brenda Baxter, (907) 474-6701.

Nov. 29-Dec.3: Congress on Recreation and Resource Capacity, Snowmass Village, Aspen, CO. Contact: Susan Scott Lundquist, (970) 491-4865 or FAX (970) 491-2255.

Congressional Action Pertinent to the Mississippi River Basin

Endangered Species

S. 1100: Chafee, (R/RI). Addresses designation of critical habitat. Hearing held on 5/27.

H.R. 494, 495 and 496: Endangered Species Fair Regulatory Process Reform, Land Management Reform and Criminal and Civil Penalties acts, (W.M. Thomas R/CA).

H.R. 960: G. Miller (D/CA). Amends the **Endangered Species Act (ESA) of 1973** to strengthen the commitment to protect wildlife, safeguard our children's economic future, and provide assurances to local governments, communities, and individuals.

H.R. 1101: R. Pombo (R/CA). Amends the ESA to improve the ability to prevent flood disasters.

H.R. 1763: K. Calvert (R/CA). Amends the ESA, limiting required mitigation costs for public construction projects to less than 10% of total project cost.

Environment

S. 352: State and Local Government Participation Act of 1999, C. Thomas (R/WY). Amends the National Environmental Policy Act (NEPA) of 1969 requiring that Federal agencies consult with State agencies and county and local governments on environmental impact statements.

S. 481: Environmental Crimes and Enforcement Act of 1999, C.E. Schumer (D/NY). Provides for protection of government employees and the public from environmental crimes.

S. 1090: J. Chafee (R/RI): Reauthorizes and amends the Comprehensive Environmental Response, Liability, and Compensation Act of 1980.

H.R. 525: Defense of the Environment Act of 1999, H.A. Waxman (D/CA). Requires any Congressional provision that reduces environmental protection to: (1) identify and describe the provision, (2) assess the extent of the reduction, (3) describe actions taken to avoid the reduction, and (4) recognize any statement of the Comptroller General assessing the reduction.

H.R. 1836: D. Bereuter (R/NE). Balances the wind and water erosion criteria and wildlife suitability criteria for the 18th Conservation Reserve Program signup.

Population Growth

H. Con. Res 17: Population Growth Resolution (T.C. Sawyer (D/OH). Expresses the sense of Congress that the U.S. should develop, promote, and implement, at the earliest possible time and by voluntary means consistent with human rights and individual conscience, the policies necessary to slow U.S. population growth.

Public Lands

S. 446: (B. Boxer D/CA). Provides for permanent protection of U.S. resources in the year 2000 and beyond.

S. 510: (B. Campbell R/CO) and H.R.

883: (D. Young (R/AK). Preserves U.S. sovereignty over public and acquired lands, and preserves state sovereignty and private property rights in non-federal lands surrounding public and acquired lands.

S. 532: (D. Feinstein (D/CA) and H.R. 1118: (T. Campbell (R/CA) Provides increased funding to resume state grant funding for the Land and Water Conservation Fund and development of conservation and recreation facilities in urban areas under the Recreation Recovery Programs.

S. 338: (B. Campbell R/CO); S. 568: (C. Thomas R/WY) and H.R. 154: (J. Hefley (R/C). Establish fee systems for commercial filming activities on public lands.



S. 826: C. Thomas (R/WY). Limits the federal acquisition of land located in a State in which 25% or more of the land in the State is owned by the U.S.

H.R. 488: Northern Rockies Ecosystem Protection Act of 1999, C. Shays (R/CT). Special designation of lands in the states of ID, MT, OR, WA, and WY.

H.R. 701: Conservation and Reinvestment Act of 1999, D. Young (R/AK). Provides funding for Land and Water Conservation Fund, Urban Parks and Recreation, and Teaming With Wildlife.

H.R. 798: G. Miller (D/CA). Provides for permanent protection of U.S. resources in FY 2000 and beyond through Land and Water Conservation Fund funding, Urban Parks and Recreation and various other conservation programs.

H.R. 829: D. DeGette (D/CO). Designates certain lands in Colorado as components of the National Wilderness Preservation System.

H.R. 1002: Declaration of Taking Act, (D.

Hunter (R/CA). Amends the subject act to require that all condemnations of property by the government proceed under that Act.

H.R. 1118: T. Campbell (R/CA). Increases Land and Water Conservation Fund and Urban Parks and Recreation Recovery Program funding, State grants funding and acquisition and development of conservation and recreation facilities and programs in urban areas.

H.R. 1142: D. Young (R/AK). Ensures that landowners receive equal treatment to the government when property must be used.

H.R. 1207: B.F. Vento (D/MN). Prohibits the U.S. government from entering into agreements related to public lands without Congressional approval.

H.R. 1500: J. Hansen (R/UT. Accelerates the Wilderness designation process by establishing a timetable for completion of wilderness studies on Federal lands.

H.R. 1199. R.W. Pombo (R/CA). Prohibits the expenditure of Land and Water Conservation Funds for new National Wildlife Refuges without Congressional authorization.

H.R. 1284: Minnesota Valley Refuge Bill, D. Young (R/AK). Provides protection for the Minnesota Valley National Wildlife Refuge and protected species to ensure that scarce refuge land in and around the Minneapolis, MN metro area are not subjected to physical and auditory impairment.

Regulations

S. 746: Regulatory Improvement Act of 1999, S.M. Leven (D/MI). Improves the ability of Federal agencies to use scientific and economic analyses to assess cost-benefits and risk assessments of regulatory programs.

S. 1028: O. Hatch (R/UT). Simplifies and expedites access to Federal courts for parties whose rights and privileges, secured by the Constitution, have been deprived by actions of Federal agencies, entities or officials acting under color of State law.

H.R. 1864: J. Hansen (R/UT). Standardizes public hearing processes for Federal agencies within the Dept. of the Interior

H.R. 1866: J. Hansen (R/UT). Provides a

process for the public to appeal certain decisions made by the National Park Service and by the U.S. Fish & Wildlife Service.

Tennessee Valley Authority

S. 123: TVA Funding Act, R.D. Feingold (D/WI). Phases out Federal funding for the Tennessee Valley Authority.

Water Resources

S. 294: (R. Wyden D/OR). Directs the Secretary of the Army to develop and implement a comprehensive program for fish screens and passage devices.

S. 507: Water Resources Development Act, (J. Warner R/VA) and H.R. 1480: R. Shuster (R/PA). Provides for construction of various projects in rivers and harbors of the U.S.

S. 685: (M. Crapo R/ID). Preserves state authority over water within their boundaries and delegates states the authority of Congress to regulate water.

S. 740: (L. Craig R/ID). Amends the **Federal Power Act** to improve coordination and licensing processes.

H.R. 1444: P. DeFazio (D/OR). Authorizes the Secretary of the Army to develop and implement projects for fish screens, fish passage devices, and other similar measures to mitigate adverse impacts of irrigation system water diversions in the states of OR, WA, MT and ID.

H. Con. Res. 86: E. Blumenauer (D/OR). Concurrent resolution expressing the sense of Congress regarding Federal decisions, actions, and regulations affecting water.

Water Quality

S. 20: Brownfield Remediation and Environmental Cleanup, F.R. Lautenberg (D/NJ). Directs the EPA to establish a program to provide grants to States and local governments to inventory and conduct site assessments of brownfield sites. Defines brownfield sites as facilities suspected of having environmental contamination that could limit their timely use and can be readily analyzed.

S. 493: (P. Sarbanes D/MD). Requires the U.S. Army, Corps of Engineers to conduct pilot projects on toxic microorganisms in tidal and non-tidal waters.

S. 878: R. Torricelli (D/NJ). Amends the **Federal Water Pollution Control Act (FWPCA)** to permit grants for the national estuary program to be used for development and implementation of a comprehensive conservation and management plan.

H.R. 684: Farm Sustainability and Animal Feedlot Enforcement Act, (G. Miller (D/CA). Amends the **Clean Water Act**.

H.R. 1290: W.B. Jones (R/NC). Amends the FWPCA related to wetlands mitigation banking.

H.R. 1549: P. Visclosky (D/IN). Amends the FWPCA to establish a National Clean Water Trust Fund to carry out projects to restore and recover U.S. waters from damages resulting from FWPCA violations.

H.R. 1578: J. Hostettler (R/IN). Amends the wetland conservation provisions of the **Food Security Act of 1985** and the FWPCA to permit unimpeded use of privately owned crop, range, and pasture lands that have been used for the planting of crops or the grazing of livestock in at least 5 of the preceding 10 years.

Source: Congressional Affairs Update,
USFWS, 5/28/99



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River Crossings

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Reservoirs of Opportunity

America's federally-constructed lakes (i.e. reservoirs) have enormous potential for boating, fishing and other types of recreation, according the report: "*Reservoirs of Opportunity*" prepared by the National Recreation Lakes Study Commission (NRLSC). "These lakes were created by dams for a variety of purposes, such as flood control or supplying water for power generation or for irrigation, but they have untapped potential for recreation," said Robert Armstrong, chairman of the eight-member NRLSC. "These lakes are great national treasures and we need to look at how to make the most out of their potential," added Richard Davies, NRLSC vice-chairman and director of the Arkansas Department of Parks and Tourism.

A total of 1,782 federal reservoirs, managed by 11 different federal agencies, are located in 47 states. The lakes provided by these reservoirs are visited by 900 million people annually, generating an economic impact of more than \$44 billion. Lake use is growing by about 2% per year, creating additional pressure for recreation facilities. Compounding this problem, is a deferred maintenance backlog totaling \$800 million.

The NRLSC identified a number of other problems and shortcomings:

- many facilities ranging from restrooms to boat docks and roads are inadequate, aging and falling apart;
- pollution and aquatic plant invasions threaten lake health;

- fish habitat is compromised, and with it, species survival and sport fishing;
- recreation - too often not integrated with overall project management - is sometimes left high and dry when water is drawn down for other purposes; and
- some recreational uses conflict with others.



A typical large federal reservoir.

The NRLSC made a series of recommendations to help fix these problems, including the following:

- make recreation a priority at federal lakes,
- energize and focus federal lake recreation leadership,
- advance federal lake recreation through demonstration and reinvention,
- create an environment for successful federal lake recreation management,
- identify and close the gap between recreation needs and services.
- encourage needed investments in recreation facilities at these lakes by partners, and especially the private sector.

The full NRLSC report can be found at <http://www.doi.gov/nrls>. Also, a copy of the final report can be obtained from: NRLSC, 1951 Constitution Avenue NW, Room 320 SIB, Washington, D.C. 20240; or by contacting: Tim Ahern, (202) 208-5089 or Bruce Brown, (202) 219-7104.

Source: *NRLSC News Release, 6/4/99*

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Dam Removal Update

The electricity industry recently formed an alliance called the *Hydroelectric Licensing Reform Task Force*, reportedly to counter environmental lobbying on hydropower issues. The alliance – made up of trade associations and utilities, including the *American Power Assn.*; *Edison Electric Institute*; and *National Hydropower Assn.* – supports federal legislation designed to streamline regulatory processes for relicensing hydroelectric dams. Such legislation, recently introduced by Sen. Larry Craig (R/ID) and Rep. Edolphus Towns (D/NY), would force federal agencies to consider economics, irrigation, navigation, flood control, power output, drinking water supplies, and how a dam has reduced greenhouse emissions before adding conditions to permits.

Meanwhile, a report prepared by an Army Corps of Engineers (Corps) economics consultant, concludes that the federal government must breach four dams on the lower Snake River to honor treaty obligations with the Northwest tribes. This could provide substantial benefits to the tribes, such as improved salmon harvests and making lands available that are currently under water. But a panel of witnesses testifying at a House subcommittee hearing said removal of the Columbia and Snake river dams “will destroy the economy of the inland Northwest.” The dams provide an estimated \$328.7 million in annual benefits, \$250.2 million of which is in the form of power generated for Bonneville Power Administration (BPA) customers. A group of Corps’ consultants also estimates that other benefits include \$35 million saved annually by barge customers who avoid using rail or truck transportation. But if the dams are breached, the value of recreation and fisheries is estimated to increase. Those industries would experience no net benefits from keeping the dams in place, nor would the truck and rail industries.

A recent report released by *Trout Unlimited* shows that unless steps are taken to stop their decline, “wild” Snake River spring and summer chinook salmon stocks could be extinct by the year 2017. Dr. Philip Mundy, a well-respected and widely published expert on Snake River salmon, conducted the study. At the same time, the *Portland Oregonian* reports that the federal state effort to save the endangered salmon is closing in on the “dubious milestone” of \$1 billion annually, and this expenditure “hasn’t ended the threat of extinction.”

Using information from six Cabinet-level agencies and four states participating in the effort, the *Oregonian* estimates that \$935.5 million will be spent next year alone on restoration activities. The exact cost is hard to pin down because “nobody in the federal government keeps track of exactly how much money is spent saving fish.” This has caused a new reality to sink in with Congress, and Sen. Ron Wyden (D/OR) said “I don’t think we can make a case that this \$1 billion is being well spent.”

But the mix of federal vs private contributions to salmon spending may soon shift as the BPA and its customers take on responsibility for funding mitigation projects. However, in a memo to BPA four federal officials representing the National Marine Fisheries Service, the U.S. Fish and Wildlife Service, the US

EPA and the Treasury Dept said that BPA might not generate enough money to cover all potential expenses, that predictions of spending between \$437 and \$724 million on fish and wildlife measures are too low, and that breaching the four lower Snake River dams could cost the BPA \$658 million annually between 2002 and 2006. To cover these costs, the BPA plans to propose new electricity rates for 2001 to 2007, but in doing so industrial users say that federal officials are “derailing an important rate-setting process”.

Meanwhile on 6/16, the U.S. Senate passed a spending bill that prohibits BPA from raising rates to pay for dam breaching. The provision, part of the \$21.3 billion energy and water appropriations bill, was sponsored by Sen. Slade Gorton (R/WA). Gorton spokeswoman Cynthia Bergman said, “We’ll try to stop any effort that this

River Crossings

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River Crossings is a mechanism for communication, information transfer, and coordination between agencies, groups and persons responsible for and/or interested in preserving and protecting the aquatic resources of the Mississippi River Drainage Basin through improved communication and management. Information provided by the newsletter, or opinions expressed in it by contributing authors are provided in the spirit of “open communication”, and do not necessarily reflect the position of MICRA or any of its member States or Entities. Any comments related to “River Crossings” should be directed to the MICRA Chairman.

idministration puts forward to advance its dam-removal agenda." Environmental and taxpayer groups say Gorton's proposal could set a dangerous precedent and force the federal government to foot the bill for restoration efforts.

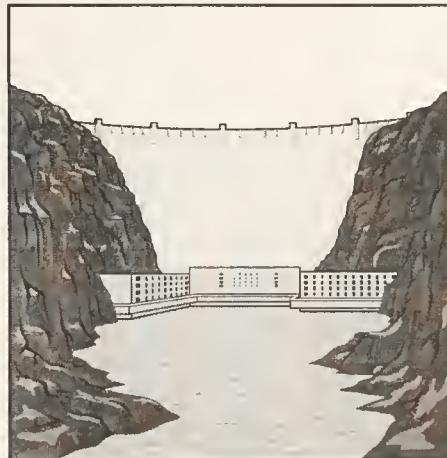
At the same time, *Emerald People's Utility District* (EPUD), a small electric utility in west-central Oregon has become the first to call for breaching the four dams, saying the action would bring long-term economic benefits and would help save the salmon. The EPUD board voted in May to support partial removal of the dams and has written the Clinton administration voicing its position. The district says breaching would cost the BPA "millions" less than making reparations if salmon become extinct. The EPUD buys 75% of its power from the BPA and ranks among its top customers.

Also, OR-based *Portland General Electric* (PGE) has taken steps to remove some of its power-generating dams in order to save the threatened salmon and steelhead trout. PGE says that removing the aging Marmot Dam on the Sandy River and Little Sandy Dam on the Little Sandy River is financially sound. The dams generate 22 MW of electricity, and their removal would make available 22 miles of the two rivers for fish spawning. A *Portland Oregonian* editorial called PGE's decision a "win-win-win deal" for environmentalists, the city of Portland and PGE. The plan needs FERC approval but could begin within the year. But the Oregon state legislature has been attempting to give itself the power to block such dam removal. Opponents argue that the bill "injects too much politics into fish preservation programs", and Gov. John Kitzhaber (D) is considering a veto. The Oregon House also passed a bill requiring sediment studies before a dam can be removed. Democrats objected, calling the bill "another attempt to slow removal of the Savage Rapids Dam". Presidential candidate and Texas Gov. George W. Bush has reportedly said that Pacific Coast salmon should be protected, but not at the expense of the Snake River dams.

Meanwhile in June, the Tennessee Valley Authority (TVA) began tearing down its \$83 million Columbia Dam on the Duck River because it is "the best thing to do environmentally." It will be the first time the agency demolishes one of its own dams. Environmentalists say the dismantling is "a minor thing" compared to the decision to turn the land over to the state for use as a recreation and wildlife management area.

Former landowners on the 12,000 acre plot say the land-use decision is not a settled issue, and they are appealing dismissal of a lawsuit challenging the TVA's claim that it couldn't return the property to them.

In Maine, the long-awaited breaching of the 162 yr. old Edwards Dam took place on 7/1. It had blocked Atlantic salmon, shortnose sturgeon and other sea-run fish from the upper Kennebec River. Plans call for dismantling the entire 19 ft. high, 917 ft. wide structure by Thanksgiving, creating "potentially the strongest sea-run fishery in the eastern U.S." Removal cost is estimated at \$5 million. FERC ordered its removal in 1997 to improve fish habitat, and in 1998 the state, the city of Augusta and the dam's operator, *Edwards Manufacturing Co.*, transferred ownership to the state to relieve *Edwards* of its liability. Environmentalists say the breaching will have nationwide significance, setting "a scientific, economic and philosophic precedent". But *National Hydropower Assn. (NHA)* officials warned environmentalists not to "get caught up in a national hysteria over dam-removal-at-all-costs", but to first explain how they plan to replace the energy and drinking water provided by the dams.



Elsewhere in Maine, a state conservation group is asking the FERC to deny a license renewal request for five hydroelectric dams on the Presumpscot River. The *Sappi Paper Mill* in Westbrook has applied for new licenses to operate the dams for 30 more years, once the original licenses expire in 2001. But *Friends of the Presumpscot River* filed a motion in late June with the FERC, saying three of the dams "don't generate enough power to justify their environmental impact." The group aims to remove the dams to help improve water quality and restore fishing to "one of the most heavily dammed stretches of water in Maine." The FERC has not yet responded to the filing.

In Georgia, the Army Corps of Engineers is proposing to decommission the Savannah River Dam, built to support commercial shipping 16 years ago, because the dam no longer serves its intended purpose. If removed, the Savannah River will be lowered 6 ft., and Augusta Port Authority member Rick Toole says the decommissioning would be disastrous for Augusta, because the city's riverwalk would then be overlooking dry ground. The project currently creates a reservoir and pool along the riverwalk. But there is no local sponsor willing to take over operation and maintenance of the site, since the cities of Augusta, North Augusta and the Augusta Port Authority all have declined to become cost-sharing owners. The federal Water Resources Development Act requires that federal projects that no longer meet their authorized uses be abandoned or transferred to new owners who would own the sites and share future costs. Biologists say that sedimentation from development projects on the Savannah River have virtually wiped out the redhorse sucker. Strengthening the presence of the sucker in the Savannah River is the species' best chance of survival. Even though the fish is surviving in the Oconee River, it is not reproducing well. The Savannah River's smaller fluctuations; clean, oxygenated rapids; and gravel bottom offers a much better breeding environment for the fish.

The *River Alliance of Wisconsin* is working to remove the Waubeka Dam in the Milwaukee River watershed. Removal could take place in 2000. The Department of Natural Resources plans to declare the dam abandoned this year and to study the effect of its removal on the watershed. According to Chuck Fry, chairman of the *Waubeka Dam Preservation Committee*, "...proponents of dam removal portray themselves as environmentalists, but what they really are is a bunch of canoeists who don't want to get off their butts and walk around a dam." The committee fears the effects of flooding downstream and pollution of the river from released sediment if the dam is removed.

The states of Wisconsin and Pennsylvania lead the nation in dam removal. *American Rivers* and *Trout Unlimited* recently released a report of *Dam Removal Success Stories* recognizing Wisconsin's national leadership. Three of 12 case studies highlighted in the report occurred on Wisconsin rivers. Forty-nine of the other 121 dam removals listed also involved Wisconsin rivers. And in Pennsylvania, according to the Dept. of

Environmental Protection (DEP), over the last few years, about 35 dams have been removed. These have ranged from "earthen mounds a few feet high" to a dam 27 ft. high and 460 ft. wide. There are more than 5,000 such dams in the state, and at least 30 others are scheduled for removal, a number that is "growing every day," says Scott Carney of the state Fish and Boat Commission. Some dams are still beneficial, but several "are not being used for anything" and don't even have traceable owners, says Margaret Bowman of *American Rivers*. To help speed the dam removal permit process, the DEP has instituted "restoration waivers" that remove some of red tape.

The bottom line with dam removal is the fact that "*the times they are a changing*". The paradigm that "any river flowing to sea unimpeded is a waste of water and power" is "under attack." The U.S. has about 75,000 big dams, and about 25% of these have exceeded their average 50 yr. life expectancy. The FERC is refusing to relicense dams where environmental costs outweigh the value of hydropower produced, or is demanding that dams be "retrofitted" with fish ladders, a process often so expensive that owners choose to tear them down instead. The breaching of the Edwards Dam in Maine has "Hoover Dam-sized stature as a symbol of changing attitudes toward rivers and how Americans use them." Previously, all dam removals involved structures considered unsafe, but "now, dams are being removed for environmental and even recreational purposes". It must be recognized, however, that all dams are not removable, nor should they be removed. Each situation should be looked at on a case by case basis. As noted in the previous article some provide real "**reservoirs of opportunity**".

Sources: Louis Jacobson, *National Journal*, 5/29/99; Nicholas K. Geranios, *AP/Portland Oregonian*, 5/26/99; *AP/Casper [WY] Star-Tribune*, 5/26/99; *Resource Committee release*, 5/27/99; Jim Barnett, *Portland Oregonian*, 6/16, 6/17 and 6/28/99; Fred Leeson, *Portland Oregonian*, 5/27/99; Jonathan Brinckman, *Portland Oregonian*, 5/19, 5/22, 5/26 and 5/27/99; Charles E. Beggs, *AP/Portland Oregonian online*, 6/4/99; Jacques Billeaud, *Knoxville News-Sentinel*, 5/26/99; Glenn Adams, *AP/Baltimore Sun/others*, 6/27/99; Les Blumenthal, *Tacoma News Tribune*, 6/25/99; Dieter Bradbury, *Portland [ME] Press Herald*, 6/22/99; *Milwaukee Journal Sentinel*, 6/12/99; John Hughes, *AP/Boston Globe/others*, 5/31/99; Murr/Begley, *Newsweek*, 7/12/99;

Steve Grant, *Hartford Courant*, 7/1/99; Alexandra Ravinet, *Augusta Chronicle*, 6/10/99; *USA Today*, 6/7/99; *Christian Science Monitor*, 7/8/99; *Milwaukee Journal Sentinel*, 7/5/99; *River Currents Online*, 6/11, 6/18 and 7/12/99; and *National Journal's GREENWIRE, The Environmental News Daily*, 11/11/98 and 5/6, 5/20, 5/22, 5/26, 5/27, 6/1, 6/4, 6/8, 6/10, 6/17, 6/18, 6/22, 6/20, 6/30, 7/7, 7/8 and 7/14/99

swimming activity (rather than at "burst swimming speeds"). Species, body length, physiological condition, behavior, water temperature, concentration of dissolved gases, turbidity, and light all influence fish swimming performance. Models of prolonged swimming speed from literature sources were used to estimate critical velocities for UMR fishes as ranging from about 120 cm/sec for white bass to 42 cm/sec for northern pike.

Current velocities through dam gate openings were estimated using a physical hydraulic model of a typical UMR navigation dam and with standard hydraulic equations. Velocities through the gated sections of dams are highest when the gates are in the water, and a submerged orifice flow hydraulic condition occurs in the gate opening. When the dam gates are raised from the water during higher river discharges, uncontrolled conditions exist, and open channel flow occurs in gate bay openings.

Estimates of current velocities through tainter gate openings from the physical model are as low as 60 cm/sec under uncontrolled flow conditions. Each navigation dam reaches its controlled discharge capacity, when the gates are



UMR Lock and Dam No. 3.

The Upper Mississippi River (UMR) is impounded by a series of 29 navigation locks and dams that restrict fish movements. The St. Paul District, Corps of Engineers and the USGS, *Upper Midwest Environmental Sciences Center* examined the effects of locks and dams on fish movement to estimate the opportunity for upriver passage by adult migratory fishes. Of the 143 indigenous UMR fish species, 25 are either known to be migratory in the UMR or are probably migratory, based on behavior of the species in other river systems. These include: silver lamprey, lake sturgeon, shovelnose sturgeon, paddlefish, goldeye, mooneye, American eel, Alabama shad, skipjack herring, bigmouth buffalo, small-mouth buffalo, blue sucker, white sucker, spotted sucker, blue catfish, channel catfish, flathead catfish, northern pike, white bass, yellow bass, largemouth bass, smallmouth bass, walleye, sauger, and freshwater drum.

Design characteristics and operation of most UMR dams allow for some upriver and downriver fish passage. This can occur (1) through the locks, (2) through the gated sections of the dams, and (3) over the fixed-crest spillways. However, the navigation locks do not provide favorable pathways for upriver fish passage. Most upriver fish movement probably occurs through the gated sections of the dams, and the opportunity for passage is dependent upon (1) hydraulic conditions at the dams, (2) fish behavior, (3) timing of fish movements, and (4) fish swimming abilities.

Fish ascending UMR dams are most likely to be swimming at the "prolonged level" of

raised out of the water, at different levels of river discharge. Opportunity for upriver fish passage through dams is greatest during uncontrolled conditions due to the lower velocities encountered through the dam gate openings. Dams with lower controlled discharge capacity may therefore present more frequent and longer windows of opportunity for upriver fish passage than dams with higher discharge capacity.

Through analysis of UMR (1) fish mark/recapture data, (2) hydraulic conditions at the dams, and (3) fish behavior and swimming performance information; estimated probability of opportunity for upriver passage through UMR locks and dams 1 (Minneapolis, MN) and 19 (Keokuk, IA) was zero. A limited number of the 25 UMR migratory fishes with the highest swimming speeds appear to have an opportunity for upriver passage through other UMR dams during most water years. Lake sturgeon,

shovelnose sturgeon, paddlefish, white bass, yellow bass, and skipjack herring are strong swimmers and tend to migrate high in the water column. Skipjack herring is a long distance migratory species restricted to the UMR below Lock and Dam 19. The other migratory species appear to be able to pass upriver through UMR dams only during periods (1) when hydraulic conditions are most favorable, (2) when uncontrolled conditions at the dams coincide with periods of upriver migration, (3) or not at all.

The consequences of restricted fish passage on adult UMR fishes may include:

- reduced reproductive success due to limited access or delay in reaching suitable spawning areas;
- reduced growth rates due to limited access to feeding areas;
- reduced over winter survival due to restricted access to wintering areas;
- increased reproductive success through concentration in tailwater areas below dams; and
- increased exploitation rates due to concentration of fish and anglers in tailwater areas.

Young-of-year and small fish may be subject to increased mortality and predation when stressed or disoriented by downriver passage through dams.

These consequences of restricted fish passage through dams may combine to limit the geographic range of some fishes and may reduce the size and health of UMR fish populations. Operational changes and structural modifications at UMR navigation dams are possible, but further studies of hydraulic conditions, behavior of migratory fishes, and alternatives for improving upriver fish passage are recommended.

Source: *Project Status Report 99-05*, Upper Mississippi River Long Term Resource Monitoring Program, USGS, La Crosse, WI 54603 Contact: Dan Wilcox, St. Paul District, US Army Corps of Engineers, (651) 290-5276, Daniel.B.Wilcox@usace.army.mil

UMRS Lock Expansions Proposed

Legislation recently passed by the U.S. Senate is intended to provide \$2 million for a navigation modernization project on the Upper Mississippi and Illinois waterway system (UMRS). Sen. Peter Fitzgerald (R/IL), sponsored the project as an amendment

to the Senate's \$21.3 billion energy and water spending bill. This \$2 million would open the door to a billion dollar plus navigation lock expansion project by funding initial work to redesign five locks on the Mississippi and two on the Illinois River.

Navigation locks on these rivers are currently 600 ft. long. The proposed project would lengthen them to about 1,200 ft. in order to accommodate modern-sized 15 barge tows. Tows navigating these rivers currently must be separated into two segments in order to negotiate existing locks. Environmental interests fear that this modernization will expand UMRS navigation capacity and create systemwide impacts on riverine species and habitats.

However, Sen. Fitzgerald says that, "At a time when American farmers are losing billions from record-low commodity prices, we need to work to ensure that they are able to transport their products to market in an efficient and cost-effective way." Speaking with similar urgency, the *National Grain and Feed Association* (NGFA) is calling for Congress to reevaluate the ability of the U.S. Army Corps of Engineers (Corps) to manage construction and rehabilitation of inland waterway system projects, calling their role an "impediment to modernization." The NGFA feels that funding for pre-construction and engineering phases of lock expansion must be provided immediately in order for U.S. agriculture to remain internationally competitive. The NGFA also raises the possibility of privatizing some of the Corps' functions and allowing other non-Defense Department related agencies to perform certain functions.

The barge industry has paid \$300 million into an *Inland Waterways Trust Fund* through an inland waterways fuel tax. This trust fund, established in the early 1980's, is to be used by the Corps, with Congressional approval, to pay for 50% of the construction and rehabilitation costs for projects on the inland waterway system. Estimated cost of the proposed UMRS rehabilitation project is \$1.3 billion, plus environmental mitigation costs. If the 50% cost share requirement of the *Waterway Trust Fund* were strictly adhered to, then construction would have to stop when \$600 million was expended, but everyone knows that will not happen. So by providing the \$2 million startup funding under this bill, the rehab project will get onto the books – "sort of like letting the camel's nose into the tent!" – so to speak. With annual appropriations, pretty soon the project will become a standard Corps'

budget item, and pretty soon "the whole camel will gradually work its way into the tent." The \$300 million *Waterways Trust Fund* will soon be expended, and the taxpayer will be expected to pick up the balance of the check – "caring for and feeding, not only of the camel, but for all of its offspring as well!" Careful public scrutiny of projects like this is merited.

Source: *Grain Transportation Report*, Agricultural Marketing Service, United States Department of Agriculture, 6/22/99

Ag Waste Update

Canadian scientists have "created the genetically altered *Enviropig* whose manure is expected to do far less harm to the environment" than ordinary "porkers". The *Enviropig*, developed at Ontario's *University of Guelph*, could help make hog operations cleaner and more cost efficient. The pigs are thought to be the first animals designed specifically to combat an environmental problem. Their cells contain DNA spliced from mice and a strain of bacteria. Unlike normal pigs, *Enviropig* manure contains less phosphorus to pollute waterways, and is thus safer to use on fields as fertilizer and hopefully should reduce contamination of surface water and underground springs.

Meanwhile, an Iowa hog farmer plead guilty in mid-June to criminally negligent violation of the Clean Water Act – the first federal case involving the act brought against a hog farm. The Justice Dept. said *Trace Inc.* "negligently discharged and caused to be discharged, untreated liquid swine manure" from its Howard County farm into Crane Creek, killing 109,172 fish, including 302 threatened American brook lampreys. The company was ordered to pay \$30,000 restitution to the Iowa Dept. of Natural Resources Fish and Game Protection Fund, and a \$10,000 fine.

A *Kansas State University* (KSU) study released in late June suggests that even pig-waste lagoons that meet current standards in that state pose a risk to regions with sandy soil and high water tables.

In Maryland a recent court decision ordering a Frederick County hog farm to scale back operations has focused attention on the growing number of "large-scale farms and their possible consequences" in the Chesapeake Bay watershed. Area governments "have been slow to recognize" the issue, and

some local farms have been built or expanded with "practically no county oversight", therefore operating without required discharge permits.

Also in Maryland about 50 farmers turned out at a public hearing in May to voice concern over proposed state regulations to reduce farm nutrient runoff into the Chesapeake Bay. The regulations were proposed to combat outbreaks of the toxic microbe *Pfiesteria piscicida*. But many farmers said there was a "rush to judgment" by environmentalists and state lawmakers in establishing the regulations. They say the link between farm runoff and *Pfiesteria* "has yet to be proven." Farmers are also concerned about economic impacts of the regulations.

Meanwhile, the national *Centers for Disease Control and Prevention* (CDC) are warning doctors nationwide to watch for symptoms that could be related to *Pfiesteria*. No specific incident prompted the warning, but the warmer spring temperatures made conditions ripe for an outbreak. The CDC warns people to avoid fishing, swimming or boating in areas with large numbers of diseased, dying or dead fish, which may signal the presence of *Pfiesteria*. The Virginia Dept. of Environmental Quality and other state agencies began sampling tidal waters for *Pfiesteria* in May and will continue through October. And *Virginia Commonwealth University* is leading a long-term study in an attempt to discover any *Pfiesteria*-related health problems.

In Chesapeake Bay itself, a power struggle between single-cell dinoflagellates may be preventing *Pfiesteria* from "getting the upper hand". According to studies conducted by *Old Dominion University* researcher David Seaborn, *Pfiesteria* "fared poorly" when it had to compete for food with *cryptoperidiniopsis* – another dinoflagellate that is much more common in the bay. Seaborn's hypothesis, presented at a symposium sponsored by the *Virginia Academy of Sciences* in late May, "could explain" why the Chesapeake has not had "alarming" problems with *Pfiesteria*. He will be traveling to North Carolina this summer to test whether the competing organism is as common in that state's waters. If not, scientists could be on the right track, Seaborn says.

In Virginia, the Pagan River is showing signs of "ecological recovery" less than two years after pork processor *Smithfield*

Foods stopped dumping hog waste into it, according to a study by the *Virginia Institute of Marine Science*. The study, paid for by *Smithfield Foods*, shows that levels of nitrogen, ammonia and phosphorus have declined, in some cases by 10 fold, since 8/97 when *Smithfield Foods* ended its slaughterhouse waste discharges. Researchers sampled water for several pollutants at 12 stations on the river between 1996 and 1998. *Smithfield Foods* CEO Joseph W. Luter III said the study is encouraging because it shows "no long-term detrimental effects on the river." A company appeal of a federal water pollution fine related to the waste discharges is pending, and a state environmental trial lawsuit is scheduled for later this year.

In Delaware farmers will get up to \$8 million over the next 15 years if they plant grass or trees along streams to protect water purity. The federal government has promised annual rental payments, plus special incentives, like money to plant and maintain vegetation, to farmers who participate in the voluntary program. Up to 6,000 acres of land along drainage ditches, streams, creeks and other bodies of water could be developed as natural buffers under the state's Conservation Enhancement Reserve Program. VP Al Gore announced creation of a similar program in Maryland two years ago. Also in Delaware state legislators in mid-June approved legislation that would create a permanent panel to draft and enforce rules curbing harmful runoff from farms and poultry houses. A newly created commission would regulate fertilizer use and storage by 7/1/00. Governor Carper is expected to sign the bill.

In South Dakota opponents of Constitutional Amendment 'E' filed a lawsuit in late June to block state enforcement of the law, which prohibits non-family farm corporations from owning interest in agricultural or ranch land, or livestock in the state. The amendment's language does not mention hogs, but the hog industry was central to the matter. Those filing the lawsuit say that instead of protecting family farmers, the amendment is making it difficult for them to compete with

like-sized producers in other states.

In Minnesota Gov. Jesse Ventura (Reform) vetoed a "controversial" feedlot emissions bill on 5/25 that would have allowed farmers to exceed emissions standards when pumping out manure pits. The bill would have given small farmers permission to exceed the standards for 7 days at a time while cleaning the pits. Larger farms would have been allowed 21 days a year to exceed the standards without risking fines. Because of Ventura's veto, a provision remains in place that counts all feedlots run by the same owner as a single large lot, making it undergo "more intense pollution control scrutiny."

Also in Minnesota, British-based *Fibrowatt* is planning to build America's first turkey manure-burning power plant. The \$65 million operation would generate 40 MWs of power. Turkey producers in Kandiyohi County have "already contracted with *Fibrowatt* for 370,000 tons of manure a year," according to Wilt Croonquist, executive director of *Kandiyohi County Rural Development Finance Authority* in Willmar. By-products of burning manure include nitrogen-free ash, which could be used as fertilizer, and steam heat. Minnesota "is a good choice for the plant," as the state produces 44 million turkeys/yr. If all regulatory conditions are met, the plant could open in 2001.

Finally, the Virginia Water Control Board voted 4-1 to approve a permit allowing a fertilizer company to spread treated human waste called sludge on nearly 3,000 acres of farmland in the Shenandoah Valley. Area residents oppose the permit, arguing that the sludge could contaminate underground water, spoil nearby land and hurt people. Farmers use the sludge for fertilizer, which is much more tightly regulated than manure or commercial fertilizer. But opponents say that much of the sludge would be spread in areas with sinkholes, caves and underground streams, increasing the likelihood of underground water contamination. Conservationists have warned that expanded use of wastewater sludge to fertilize valley fields could harm groundwater and rare plants and animals.

Source: Colin Nickerson, *Boston Globe*, 6/24/99; DOJ release, 6/25/99; *Wichita Eagle*, 6/24/99; Fern Shen, *Washington Post* 5/23/99; *USA Today*, 5/25/99; AP/Washington Post, 5/17/99; A.J. Hostetler, *Richmond Times-Dispatch*, 5/16/99; Ted Shelsby,



Baltimore Sun, 5/27/99; Lawrence Latane III, *Richmond Times-Dispatch*, 5/29/00; Jim Paterson, *Rural Electrification Magazine*, 5/99 issue; *AP/Washington Times*, 5/21/99; *Richmond Times-Dispatch*, 6/8 and 6/19/99; Todd Spangler, *AP/Dover Delaware State News*, 6/3 and 6/10/99; *Dover Delaware State News*, 6/10/99; Randy Dockendorf, *Yankton Press & Dakotan*, 6/28/99; Carson Walker, *AP/Yankton Press & Dakotan/others*, 6/29/99; *River Currents Online*, 6/4, 6/11 and 6/18/99; and National Journal's *GREENWIRE, The Environmental News Daily*, 8/11/97; 5/12 and 11/3/98; 3/18, 5/14, 5/17, 5/21, 5/24, 5/25, 5/26, 5/27, 6/1, 6/3, 6/24 and 6/29/99

Mining Issues

Federal regulators ruled in mid May that West Virginia coal mine operators cannot leave mountaintop removal sites rolling or flat "unless the land will be used for public recreation". The U.S. Office of Surface Mining (OSM) rejected a proposed state law amendment that would allow "fish and wildlife habitat and recreation lands" as post-mining land uses that qualify for an approximate original contour (AOC) variance. AOC variances allow mine operators to leave sites flattened, if they show that post-mining uses require rolling or flat land. But the OSM decision said "fish and wildlife habitats do not require flat or rolling terrain...in order to be successful".

OSM officials also announced that they will no longer write reports when reviewing mountaintop removal permits from the West Virginia Division of Environmental Protection (DEP). According to Roger Calhoun, director of the OSM's Charleston field office, "detailed, written permit reviews are not necessary." The decision comes after the *Charleston [WV] Gazette* published stories based on two OSM reviews that found "numerous ways" in which the permits did not comply with state and federal regulations. The OSM has found six pending West Virginia mountaintop removal permits unacceptable. As part of its efforts to implement a new state mountaintop removal law, the DEP will form a committee of industry lobbyists and citizens to help write regulations.

In the meantime, the *West Virginia Highlands Conservancy* (WVHC) and other critics have sued Interior Secretary Bruce Babbitt and the OSM in an attempt to block mountaintop removal. At issue are DEP permits that do not require companies to

comply with 100 ft. stream buffer zone rules. According to the DEP, the OSM says the buffer zone rules do not apply to valley fills, which are used in mountaintop removal to dispose of leftover rock and earth. But the lawsuit says that public comment and hearings should have been required.

WVHC lawyer Jim Hecker called the rule amendment "arbitrary," adding that it "deprives the residents of America's coalfields of the full protection of the hydrologic balance, fish, wildlife and related values".

Also in mid June, the Army Corps of Engineers withdrew approval of a Clean Water Act permit for a 3,100 acre expansion of *Arch Coal Inc.'s Spruce No. 1 Mine* at its *Dal-Tex complex* near Blair, WV. This would have been West Virginias' largest mountaintop removal mine. The Corps said the permit had little chance of approval in light of a pending federal lawsuit. Environmental groups had challenged the project, and in March, Chief U.S. District Judge Charles Haden II stopped the Corps from issuing the permit. The Corps and environmentalists asked Haden on 6/25 to dismiss the Corps from the lawsuit, even though *Arch Coal* representatives challenged the Corps' authority to do so on procedural grounds.

In Pennsylvania a coalition of environmental and outdoor recreation groups threatened on 6/4 to sue the federal and state governments unless they boost funding for mine cleanups. Pennsylvania's more than 1,200 strip-mine sites are "oozing acid-laced water into rivers and streams" and causing the state's "single worst water-pollution problem." Acid mines have polluted more than 2,250 miles of the state's waterways and reportedly "killed virtually all aquatic life" in polluted rivers and streams. The coal industry has created a \$28 million bond fund to pay for the cleanup bill, but environmental critics and state audits estimate the long-term cost at more than \$1 billion. John Hanger, executive director of *Citizens for Pennsylvania's Future* said, "If something isn't done, the public is going to pay ... either...with polluted water, or it will pay with tax dollars." Meanwhile, the Pennsylvania Department of Conservation and Natural Resources (DCNR) Secretary announced in early June an \$18,500 *Keystone Rivers Conservation Grant* to help eliminate acid mine drainage flowing into Babb Creek in Tioga County. The *Pennsylvania Environmental Defense Foundation Inc.* will use the grant to develop systems to treat polluted discharge from two abandoned coal mines.

In Montana, taxpayers will likely have to come up with as much as \$400,000 to maintain the now-defunct *Zortman and Landusky* mines for the rest of the year, since the company maintaining the gold mines walked off the job in mid June. The state fired *Reclamation Services Corp.* of New York since it had already spent its annual budget in just six months. The company was formed when the now-bankrupt *Pegasus Gold Corp.* reorganized. *Pegasus* was the company that fought to build a cyanide leach gold mine near the headwaters of the Blackfoot River, prompting *American Rivers* to list it as one of the nation's most endangered rivers of 1998. Reclamation of the mines is expected to begin by the end of 1999 or in early 2000.

Also in Montana, the *Atlantic Richfield Co.* (ARCO) has paid the state \$151 million as part of a 1998 settlement for polluting the Upper Clark Fork River Basin. The payment is part of a \$260 million agreement with the state, the USEPA and the Confederated Salish and Kootenai Tribes. A federal judge approved the settlement on 4/19, culminating a 16-year battle in court over mining and smelting operations in Butte and Anaconda, MT. The state will put about \$129 million into a damage restoration account for the river basin, with \$10 million delegated for the contingency costs of cleaning up the Silver Bow Creek Superfund site. Negotiations surrounding ARCO's responsibility for the state's natural resource damage claims in other nearby regions have not yet been resolved

Meanwhile, the *Montana State University's Reclamation Research Unit* (MSURRU) provides a storehouse of knowledge for restoring and reclaiming thousands of abandoned mining sites. Since the 1970s, MSU scientists have been trying to "reintroduce some semblance of nature" by working with private companies, the USEPA and the state Dept. of Environmental Quality. Montana has more than 10,000 abandoned, polluted coal mines, and provides the laboratory for the six-person MSURRU staff. The unit offers expertise to companies undertaking new mining endeavors, while training about 10 students/yr. in the nation's only master's degree program in land rehabilitation. Unit director Dennis Neuman said his group would like to develop technology to "make mining environmentally benign" and prevent the industry from fleeing to Third World countries where regulations are less strict.

Finally, in New Mexico, *Land Renewal Inc.*,

an "offshoot" of the Albuquerque-based nonprofit *Center for Holistic Management*, is using a "variety of natural methods," including herds of cattle, to return mined land to its former natural state. Shannon Horst of *Land Renewal* said the cattle offer some advantages for traditional mine reclamation methods such as capping.

Horst said capping tends to leave bare soil that becomes hard and "virtually impervious to the establishment of seeds." But the cattle activity helps break up the soil and "raises the rate of germination." The key to the method is to bring in a large number of cattle for a short time, typically 300 cattle on a single acre for one day. Other methods the company uses include enriching the soil with green waste such as grass clippings or chipping the foliage "ripped out by the mining process."

Sources: Ken Ward Jr., *Charleston [WV] Gazette*, 5/1, 5/14, 5/19, 6/13, 6/14 and 6/26/99; *Lexington Herald-Leader*, 5/15/99; *OSM release*, 5/4/99; Mark Jaffe, *Philadelphia Inquirer*, 6/5/99; *The Missoulian*, 6/25/99; Robin Frames, *Albuquerque Journal*, 6/21/99; Joe Kolman, *Billings Gazette*, 6/20/99; *AP/Billings Gazette*, 7/20/99; *River Currents On Line*, 6/11 and 6/25/99; and National Journal's *GREENWIRE*, *The Environmental News Daily*, 4/1, 4/21, 6/7, 6/22, 6/23, 5/17, 5/19, 6/14, 6/28 and 7/20/99

Miscellaneous River Issues

Snow Removal Impacts - The California Dept. of Transportation has decided to end the "slushing out" snow-removal practice blamed for harming Lake Tahoe's water quality after the *Lahontan Regional Water Quality Control Board* cited the state agency for the practice. The "slushing out" technique uses large amounts of road salt, causing snow to melt quickly and overwhelm stormwater treatment traps. Sources: *AP/Contra Costa [CA] Times/others*, 6/14/99 and National Journal's *GREENWIRE*, *The Environmental News Daily*, 6/15/99

Public Use Limits on Fed Lands - The Clinton Administration plans to ban most public use on 5 million acres of federal land in 6 states, reportedly "to placate environmental voters before the 2000 presidential election." In many cases "all recreational uses would be banned except walking and meditating." The six states are Alaska, Arizona, Colorado, Missouri, Montana and Utah. Western lawmakers are also concerned that the administration's proposal for a 2 yr. moratorium on mineral activity in

Montana, Colorado and Missouri would eliminate jobs and tax revenues and make the U.S. more dependent on foreign oil. Sources: Audrey Hudson, *Washington Times*, 6/14/99 and National Journal's *GREENWIRE*, *The Environmental News Daily*, 6/14/99

WY Land Acquisition - The Nature Conservancy in late May completed a \$3 million purchase of the 15,000 acre Heart Mountain Ranch in Wyoming to prevent development in the Big Horn Basin. Sources: Robert Strickman, *Billings Gazette*, 6/4/99 and National Journal's *GREENWIRE*, *The Environmental News Daily*, 6/8/99

VA Water Quality Court Order - A lawsuit filed by the *American Canoe Association* and the *American Littoral Society* has won a court order compelling federal officials to more aggressively monitor pollutants allowed in Virginia's waters. The suit claimed that USEPA was not enforcing the Clean Water Act, and will require Virginia to set pollution levels for the waterways. If the state fails to do so under a specified schedule, USEPA will draft guidelines and ensure compliance. Critics feel that USEPA settlement of the cases could lead to unnecessary intrusion by the federal government and give the agency power to dictate land-use patterns and economic development. Sources: *Washington Post*, 6/23/99 and *River Currents On Line*, 6/25/99

PA Steel Mfg. Cleanup - In an effort to reduce nitrate discharge into Pennsylvania's Connoquenessing Creek, the *Armco* plant in Butler will be using hydrogen peroxide to clean its steel, rather than nitric acid. The plant must reduce the nitrate discharge or lose its state water-discharge permit. The company believes this is the first time a steelmaker has attempted to use peroxide to clean or pickle steel. Sources: *Philadelphia Inquirer*, 6/21/99 and *River Currents On Line*, 6/25/99

Platte River Pact Endangered Species - Nebraskans First, a coalition of groundwater irrigators, has called on the Interior Dept. (DOI) to halt work on the three-state Platte River agreement "until it meets all the provisions of the Endangered Species Act." The group says the DOI and the U.S. Fish and Wildlife Service "failed to notify" seven Nebraska counties when part of the Platte was designated as critical habitat for endangered whooping cranes. *Nebraskans First* says the failure invalidates the agreement under which Nebraska, Colorado

and Wyoming share responsibility with the DOI for endangered Platte River species. At least 30 Nebraska irrigation applications remain "on hold" until the state can determine how much Platte River Basin water is required to ensure survival of the endangered pallid sturgeon. A draft policy being developed on the sturgeon would be the state's first formal policy on how to handle depletions of river water that may affect endangered species. Meanwhile in the upper reaches of the Platte, a federal judge dismissed a lawsuit filed by a group of ranchers, farmers and water users based in Walden, Colorado, who want to increase logging in a national forest as a way to save the Platte River's endangered species. The *Coalition for Sustainable Resources* argued that water runoff would increase if the U.S. Forest Service cut down half of the harvestable trees in the Medicine Bow-Routt National Forest. Increased water flow would benefit endangered species living downstream, they said. Citing the federal study of Platte River endangered species, U.S. District Judge Clarence Brimmer "ruled that the suit was premature" because "The experts that should be considering these matters are working [on] this problem." Sources: Julie Anderson, *Omaha World-Herald*, 5/25 and 5/26/99; *AP/Billings Gazette*, 5/26/99; *AP/Omaha World-Herald/others*, 5/23/23; and National Journal's *GREENWIRE*, *The Environmental News Daily*, 5/24 and 5/26/99

MT Oil Waste - A U.S. district judge fined a Conrad, Montana oil field management company \$50,000 for violating the federal Safe Drinking Water Act. Judge Charles C. Lovell fined *Balko Inc.* for illegally dumping oil waste into unpermitted wells. Source: Erin P. Billings, *Billings Gazette*, 5/28/99

Cleaner Rivers? - A report written by specialists within the USEPA and released by *Public Employees for Environmental Responsibility* (PEER) finds a lack of credible, scientifically verifiable information that our nations rivers and streams have become cleaner over the last two decades. The report gives an insider account of how USEPA and its State partners; through a mix of politics, bureaucratic inertia and bad science; perpetuate the fiction that official water quality reports are valid, by routinely presenting Congress and the public with conflicting, erroneous and manipulated data containing little accurate information on the actual condition of the nation's waterways. Source: *River Currents Online*, 6/11/99

OR Stream Access - Access to stream

banks along private lands is at the center of a debate in Oregon, as a bill sponsored by the *Association of Northwest Steelheaders* died in committee. The bill that would have granted recreational access to streambanks almost made it out of the Senate, but was killed by strong opposition from agricultural groups and other activist landowners. The *Steelheaders* now plan to press a lawsuit which the group hopes will force the state to declare more rivers as navigable, meaning the public has the right to use the banks below the normal high-water line. So far, only 10 Oregon rivers are officially declared navigable. Sources: *Portland Oregonian*, 6/22/99 and *River Currents On Line*, 6/25/99

WV Water Quality - The USEPA threatened again in late June to step in and draft a plan to "keep West Virginia's rivers and streams from getting any dirtier" if the state Environmental Quality Board (EQB) does not act soon. Four environmental groups had threatened to sue EPA in late May because the agency has not forced West Virginia to develop the plan. The groups filed a 60 day formal notice of intent to sue, saying the EPA has not adequately enforced the Clean Water Act, which requires states to implement a stream anti-degradation policy. The EQB approved an anti-degradation policy in 1995, and last year state officials developed a plan, as required by the 1972 Clean Water Act, but the plan has not been implemented. After a 7/98 hearing, EQB members decided not to submit the plan for legislative consideration. Instead they formed a committee of regulators, environmentalists and industry representatives to discuss it. The committee has not met, but now hopes to have a recommendation for state lawmakers by 8/00. Sources: Ken Ward Jr., *Charleston [WV] Gazette*, 5/29 and 6/24/99 and National Journal's GREENWIRE, *The Environmental News Daily*, 6/25/99

WI Wetland Losses - A *Sierra Club* report says urban sprawl and loss of wetlands are major factors in destructive flooding across the state of Wisconsin. Citing Army Corps of Engineers data, the report says developers had a 99% success rate in securing permits to fill wetlands between 1988 and 1996. Sources: Tom Vanden Brook, *Milwaukee Journal Sentinel*, 6/22/99 and National Journal's GREENWIRE, *The Environmental News Daily*, 6/24/99

Rare Non-game Fish Stocking - Knoxville, TN-based *Conservation Fisheries*, the only private facility in the U.S. devoted to the captive breeding and restoration of rare non-

game fish, is restocking Tennessee streams with four endangered species – the smoky madtom, yellowfin madtom, duskytail darter and spottail chub. Sources: Morgan Simmons, *Knoxville News-Sentinel*, 5/23/99 and National Journal's GREENWIRE, *The Environmental News Daily*, 5/25/99

VA Mountain Stream Pollution - A study by *University of Virginia* (UV) researchers has found that only about 50% of the state's mountain streams support trout, down from an estimated 82% before the mid 1800s. And "unless acidic emissions from power plants and other sources are reduced dramatically," only about 42% of the streams will support trout by the mid- 21st century. Sources: *UV release*, 5/11/99 and National Journal's GREENWIRE, *The Environmental News Daily*, 5/25/99

Tribes Gaining Land Management Authority - In a deal that could be "the first of its kind" in the U.S., the Grand Ronde tribe in Oregon may gain authority to manage nearly 11,000 acres of public forest land near its reservation. Under the agreement signed in mid June with the U.S. Forest Service, the tribe will write a 10 yr. management plan for 6,600 acres of the Siuslaw National Forest. U.S. Bureau of Land Management officials say they expect to sign a similar agreement in the next few weeks giving the tribe 4,200 more acres to manage in the South Yamhill River watershed. The agreements could lead to a "stewardship" experiment allowing the tribe to carry out fish, wildlife, stream and forest projects after two years. The move signals the "rising influence" of Native Americans in the management of public lands and natural resources that once belonged to them. This is evidenced by recent agreements over sacred sites in California, salmon management in the Columbia River and wolf reintroduction in Idaho. Sources: Courtenay Thompson, *Portland Oregonian*, 6/15/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 6/16/99

Ranchers/Environmentalists Cooperate - Coalitions of ranchers and environmentalists are beginning to work together to meet the common objectives of fertile soil, clean water, flourishing wildlife and healthy ecosystems. The *Six-Six Group* in the Southwest has been working to preserve endangered ranches, adopt environmental restoration goals and implement grazing methods that are compatible with wildlife habitat. And the *Snowline Grazing Assn.* in Montana has fenced off riparian areas, put

in water troughs to deter livestock from rivers, and pulled noxious weeds so they don't spread. Rancher Dean Welborn said, "We've gone out of our way to be good stewards of the soil." Furthermore, if cattle are forced off of public land because of increasingly strict regulations and steep grazing fees, ranchers would be driven out of business and wildlife habitat would be "divvied up" into suburban-style developments to accommodate booming Western population. Source: National Journal's GREENWIRE, *The Environmental News Daily*, 7/14/99

TN River Mussel Recovery - Biologists plan to "put more mussel into Muscle Shoals" by returning mollusk species to the Alabama riverbed where they once thrived. At least 34 mussel species, washed out by reservoirs, have disappeared from the 53 miles of the Tennessee River, once home to the "world's greatest collection of freshwater mussels." Government biologists say they're finally ready to reintroduce up to 16 species of endangered mussels into a carefully selected section of Muscle Shoals. But it hasn't been easy, said Richard Biggins, U.S. Fish and Wildlife Service fish and mollusk recovery coordinator. "It's 20 years ...that I've been working with these animals to get to this point." Sources: Katherine Rizzo, *AP/Lexington Herald-Leader*, 6/3/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 6/4/99

TVA Water Management Examined - A General Accounting Office (GAO) report released on 5/25 says the public should participate in re-examination of the Tennessee Valley Authority's (TVA) water level management policy. While the government report does not call for TVA to end its moratorium on changing lake levels, it recommended that Chairman Craven Crowell ensure that future studies include both costs and benefits of changing lake policy. TVA said that it lowers lakes such as the Douglas and Cherokee for flood control, hydroelectric power generation, navigation and environmental reasons. Lake users say TVA should delay water drawdowns until Labor Day instead of starting earlier in the summer. But the agency did not say whether it would consider making any lake level changes before the moratorium ends in 03/01. Meanwhile, TVA is forming a public advisory council to "help guide" its land and water stewardship programs. The *Regional Resource Stewardship Council* (RRSC) will help oversee flood control and preservation of 11,000 miles of public shoreline, 277,000 acres of reservoir land and 480,000 acres of

recreation lakes in TVA's seven-state region. The RRSC will have 20 members, seven appointed by the governors of each TVA state, with the rest representing TVA distributors, businesses, environmental interests and other parties. Also, starting next year, TVA's natural resources programs will be financed through a deal brokered by Sens. Fred Thompson (R/TN) and Bill Frist (R/TN), allowing restructuring of TVA's public debt to finance its programs. In addition, TVA will receive \$7 million from Congress for natural resources programs, but only for its Land Between the Lakes preserve on the KY-TN border. Sources: Jacques Billeaud, *Knoxville News-Sentinel*, 5/25/99; Duncan Mansfield, *AP/Birmingham News online*, 6/29/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 5/25 and 6/30/99

Niobrara River Management - A federal judge ruled on 6/15 that the National Park Service (NPS) has delegated too much managerial control over a portion of the Niobrara River in northern Nebraska to a local council. The *American Canoe Assn.* and the nonprofit *National Parks and Conservation Assn.*, which filed the lawsuit last year against NPS Director Robert Stanton and Interior Secretary Bruce Babbitt, had charged that the local council "failed to manage and protect the river." The river was "overcrowded" and polluted by pit toilets while surrounding campsites were "poorly managed." The ruling puts control back in the hands of the NPS, much to the liking of the groups that filed the suit, who "feared the arrangement for the Niobrara could set a precedent, chipping away at federal control of the park system." The Council made up of local residents with minimal NPS oversight was described as irresponsible and going beyond the agency's legal limits. The NPS hoped that creating a council with local representation was a way to gain acceptance among area residents for scenic-river designation because of the voice it gave them in river management. Sources: *AP/Yankton [SD] Press & Dakotan*, 6/17/99; *Omaha World Herald*, 6/16/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 6/17/99

Upper Mississippi Still At Risk - Though less polluted than it was decades ago, the Upper Mississippi River is "slowly deteriorating" from agricultural runoff and an inability to periodically flush itself of sediment, a multi-agency multi-state report says. The report, "Ecological Status and Trends of the Upper Mississippi River

System 1998," says an elaborate lock and dam system has led to buildup of sediment, "leading to loss of aquatic life and plant diversity and the insects, fish, birds and waterfowl that depend on them." Dams, training structures and levees which provide adequate depth for barge traffic and protect floodplain agriculture have confined the river's erosive power to a central channel, while side channels and backwaters which fill with silt and sediment are no longer replaced during floods, slowly eliminating the places river wildlife need to feed, conserve energy and reproduce. Dam operations designed to provide sufficiently deep water for barges have eliminated



Sediments are choking Upper Mississippi River Backwaters.

periods of low summer flows when river bed sediments would consolidate, setting the stage for growth of marsh plants consumed by river wildlife. Additionally, dam operations elevate floodplain water tables, threatening long-term health of the river's floodplain forest. And construction in flood plains and conversion of prairies and forests to farmland has led to increased sewage and pesticide runoff from farms. The report was produced by the USGS, Army Corps of Engineers and states of MN, IL, IA, MO and WI. USGS biologist Robert Delaney said better funding is needed to help attack the problems. He called the money being spent now to restore and protect habitat "only a drop in the bucket" compared with what is needed. Sources: Dennis Lien, *St. Paul Pioneer-Press*, 6/17/99; *AP*, 6/17/99; *River Currents Online*, 6/18/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 6/17/99

Yellowstone River Lawsuit - Six environmental groups filed a lawsuit against the Army Corps of Engineers on 5/20, charging that the agency is destroying the Yellowstone River by allowing bank stabilization projects without studying their cumulative downstream effects. The lawsuit, filed in U.S. District Court in Billings, alleges that the Corps violates the National Environmen-

tal Policy Act and the Clean Water Act. The groups contend that the number of permits for projects along the river has increased "dramatically" as property values have increased and landowners have become less tolerant of the river's natural movement and flooding. They want the agency barred from issuing such permits until a study is completed that shows how bank stabilization projects will affect the river, its fisheries and surrounding wildlife habitat. Sources: Joe Kolman, *Billings Gazette*, 5/21/99 and National Journal's GREENWIRE, *The Environmental News Daily*, 5/21/99

Yellowstone River Pollution - More than half of the fish in the Yellowstone River system had low levels of long-banned pesticides, "offering lasting evidence of a widespread DDT spraying campaign during the 1950s," according to a USGS study last year. "It tells us these chemicals last for a long time out there," Dave Peterson of the USGS said. DDT was banned in the U.S. in 1972. Fish from Yellowstone Lake contained the highest levels of DDT and its sister compounds, DDE and DDD. That suggests the source of the chemicals was upstream, inside Yellowstone National Park where DDT was sprayed between 1953 and 1957. Sources: Michael Milstein, *Billings Gazette*, 5/17/99 and National Journal's GREENWIRE, *The Environmental News Daily*, 5/17/99

Missouri River Issues/Restoration - The *Sierra Club* stated in a recent report that the health of the Missouri River is at risk, and criticized the National Park Service (NPS) for poor implementation of recreational programs intended to enhance the River. The NPS agrees that it has done a poor job, though it has tried to secure funding for the programs. The *Sierra Club* claims that the NPS has turned management responsibility over to the Corps of Engineers, who seems only concerned about streambank stabilization. The *Sierra Club* believes that the river is a national resource and should be treated as such. Sen. Bob Kerrey (D/NE) agrees and has introduced his Missouri River Valley Improvement Act of 1999, a \$320 million bill designed to revitalize riverfronts, attract recreation and tourism, and protect river wildlife. Kerrey's bill, co-sponsored by Sen. Tom Daschle (D/SD), authorizes new riverfront revitalization projects, interpretive centers, and recreational facilities; establishes a river monitoring program; and expands existing habitat restoration efforts in Nebraska, Iowa, Kansas and Missouri. The bill also requires the Corps and the Dept. of Interior to consider whether to

create a habitat restoration program for the Dakotas and Eastern Montana, acquire land from willing sellers to expand the River's refuge system, and study dam operations designed to aid cottonwood trees along the 149 mi. Wild and Scenic segment in Montana. The bill also amends the Flood Control Act of 1944 to put fish and wildlife on an equal footing with navigation, flood control, hydropower and irrigation.

Sources: *Omaha World Herald*, 5/30/99; *American Rivers press release* 6/24/99; and *River Currents On Line*, 6/4 and 6/25/99

Fish Friendly Farming - Agricultural interests in the state of Washington will meet with state and federal agencies in September to establish new guidelines for farming near threatened and endangered fish. Negotiations will focus on making farm and irrigation practices more "fish-friendly" by establishing buffer zones and using fish screens to protect salmon stock. Participants – who will include the state departments of agriculture and ecology, the U.S. Fish and Wildlife Service and major agricultural interests – plan to brainstorm ideas that individual districts can use to develop their own salmon-protection plans. Farmers and government officials say an agriculture plan to ensure salmon protection could be modeled after a similar one recently adopted by the timber industry in which timber companies receive tax breaks in exchange for not cutting along salmon streams. Janet I. Tu, *Wall Street Journal*, 6/30/99; National Journal's GREENWIRE, *The Environmental News Daily*, 3/16, 6/9 and 7/1/99

Clarks Fork Logging Issues - The Clarks Fork of the Yellowstone River will not be threatened by proposed logging, thanks to a ruling by the U.S. Forest Service in favor of environmentalists that appealed a planned Shoshone National Forest timber sale. Arguing that the environmental study behind the timber sale study was faulty, the *Wyoming Outdoor Council, American Wildlands and the Alliance for the Wild Rockies* claimed that logging 140 acres above the Clarks Fork of the Yellowstone River would threaten the federally designated wild and scenic river, as well as destroy rare plants and habitat for endangered wildlife. Sources: *Omaha World-Herald*, 6/8/99; and *River Currents Online*, 6/11/99

Alabama Sturgeon Listing - The *Alabama-Tombigbee Coalition*, a business group, says that listing the Alabama sturgeon as an endangered species could interrupt river-

based commerce over much of Alabama and the Tennessee-Tombigbee Waterway, because such a listing would mean all federally funded or regulated activities deemed harmful to the sturgeon would have to cease. A 1993 study by the *University of South Alabama and Troy State University* estimated that such a move would cost 20,000 jobs, mostly in the wood products industry. Meanwhile, according to a scientific poll, about 2/3 of Alabama voters support the sturgeon listing. State politicians are not as supportive: "We don't want these ugly fish in the state of Alabama, said state Rep. Johnny Ford, D-Tuskegee at a recent public hearing. The U.S. Fish and Wildlife Service (USFWS) wants the fish, which has disappeared from 85% of its natural habitat, put back on the endangered species list. Sam Hamilton, USFWS Regional Director in Atlanta, says that listing the sturgeon "...will not stop any commercial activities, period. There are already four federally listed species in those rivers, one a sturgeon. Adding another will not change anything." Some question whether the sturgeon is actually distinct at all, citing its striking similarity to the shovelnose and pallid sturgeons. Interior Secretary Bruce Babbitt reversed a 1994 attempt to list the fish after such questions arose. Sources: *AP/Biloxi Sun Herald/ others*, 6/22/99; *USFWS news release* 6/23/99; *River Currents On Line*, 6/25 and 7/16/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 6/22/99

Grazing Law Suit - The Sante Fe-based *Forest Guardians* filed a lawsuit on 6/1 seeking information from the U.S. Forest Service (USFS) about ranch loans based on the number of cows permitted to graze on public lands. The group also objects to USFS participation in the loans through a 1938 policy under which the agency agrees to turn grazing permits over to banks if a rancher defaults on a loan, ensuring continuation of grazing on public land after a foreclosure. *Forest Guardians* says that if a rancher's loan goes bad the permit should revert to the USFS instead of a bank, which sells the permit along with the ranch property. But ranchers say the number of cattle allowed by the permit on public land is included in the purchase price of ranches and that number is calculated by the IRS when it assesses inheritance taxes. Caren Cowan of the *New Mexico Cattle Growers Assn.* said, "This may be the defining case. This is very serious." Sources: Mike Taucher, *Albuquerque Journal*, 6/2 and 6/4/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 6/4/99

USFWS Criticized - Congressional investigators say the U.S. Fish and Wildlife Service (USFWS) is "mismanaging a popular conservation program and diverting tax-payers' money into a 'slush fund' to finance pet projects." House and General Accounting Office investigators say funds from the agency's \$1 million *Director's Conservation Fund* has been "improperly" used for unauthorized purposes, such as research and projects on migratory birds. Money for the fund comes from excise taxes on hunting and fishing equipment, and Congressional investigators say it should only be used for administering state hunting and fishing grants. The agency said the spending was legal, and an agency spokesman said USFWS Director Jamie Rappaport Clark plans to eliminate the account next fiscal year. The GAO also said that the \$31 million fund, designed to administer the Federal Aid in Wildlife Restoration Act and other conservation programs, was used for purposes not authorized by Congress. House Resources Chairman Don Young (R/AK), who requested the GAO audit, said it uncovered a "ream" of "improper, imprudent, irresponsible expenditures," including travel and relocation expense abuses and a lack of internal audits. Meanwhile, the USFWS has agreed to settle the disputed dismissal of biologist, James M. Beers after several months of negotiations. Beers said he was dismissed because of a disagreement with his superiors over a conservation group's request for grant money. Beers will receive \$150,000 cash, 168 hours of annual leave, attorney fees, and a letter of apology. In 2/98, the agency proposed moving Beers from its Arlington, VA, headquarters to the Hadley, MA regional office, in connection with a transfer of some of his job duties. Two months later, the agency said it was dismissing Beers for not accepting the transfer. A U.S. Office of Special Counsel (OSC) investigation said the transfer violated federal personnel regulations because the USFWS did not transfer a significant portion of Beers' duties to the Hadley office. Rob Gordon of the *National Wilderness Institute* (NWI) said the settlement is a "huge victory" that will allow for disclosure of "the degree to which USFWS officials abused the public's trust in their management of conservation funds." Sources: Audrey Hudson, *Washington Times*, 7/21/99; *HRC release*, 7/20/99; *OSC release*, 6/2/99; *NWI release*, 6/3/99; Barbara J. Saffir, *Washington Times*, 5/27/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 6/3, 6/7, and 7/21/99

Ecoconscious Timber Sales - U.S. Forest Service (USFS) supervisors in Montana and northern Idaho are testing a new land stewardship contract method that emphasizes the end condition of the land rather than the board ft. of wood provided. The "eco-conscious" timber sales will define the desired condition of a piece of land, then request proposals from groups interested in doing the work. Regional forester Dale Bosworth said, "[Previously], whenever we got into a timber sale, everyone wanted to argue about how much volume we were going to take. No one discussed the health of the forest or the watershed or wildlife." Critics say the new approach will prevent counties from collecting the 25% they usually get from timber sales. And some fear the USFS is "simply using the contracts to sneak timber sales past critics". Sources: *AP/Billings Gazette*, 5/17/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 5/17/99

Southeastern Water Rights Issues - Plans to settle a decade-old water war between Alabama, Florida and Georgia have hit another snag. A "technical glitch" threatens to derail negotiations toward a regional plan for sharing the waters of the Chattahoochee River and other area waterways that pass through the three states. Georgia, which controls the headwaters of all the shared rivers, has promised to regulate water flows from four big federal dams to keep Alabama's and Florida's supplies above a "certain minimum" during droughts. But Florida and Alabama negotiators "say there is no way they can easily verify whether they will get the amount of water Georgia proposes to send them." Officials say the states "are still so far apart in their demands" and that they may not meet an October deadline for reaching a settlement. If the negotiations fail, the Supreme Court will take up the dispute. Sources: Charles Seabrook, *Atlanta Journal-Constitution*, 5/24/99 and National Journal's GREENWIRE, *The Environmental News Daily*, 12/22/98 and 5/25/99

PA Endangered Species Listing - The Pennsylvania Fish and Boat Commission has tripled the number of aquatic species listed as endangered from 9 to 28 and added 8 species to a conservation list for a total of 54. Mining industry representatives said the action would delay projects and increase costs, but the PA Dept. of Environmental Protection officials said water quality standards required to protect the fish are already maintained in most streams. Sources: *AP/Philadelphia Inquirer*, 7/20/99; and National

Journal's GREENWIRE, *The Environmental News Daily*, 7/20/99

FL Dredging Issue - For 41 years the U.S. Army Corps of Engineers has been dredging the Apalachicola River in Florida to allow for operation of a limited number of barges carrying fertilizers, fuel, asphalt and other cargo upstream to Georgia and Alabama. State scientists say that environmental damage from the dredging has reached a crisis point, and destroyed as much as 25 miles of productive river. The state is now proposing the most restrictive environmental permit in the project's history, asking the Corps to stop dumping dredged sand along riverbanks, and to restore river habitats. The Apalachicola River is an impressive ecosystem, with forested ravines, rare trees and mysterious, ancient swamps. It also fuels the marine system of Apalachicola Bay, home to 90% of Florida's yearly oyster harvest. Also one of the highest densities of amphibians and reptiles in North America lives in the upper part of the Apalachicola basin. Sources: Julie Hauserman, *St. Petersburg Times*, 6/7/99; *St. Petersburg Times*, 6/8/99; *River Currents Online*, 6/11/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 6/10/99

CO Fish Ladder - A 3 yr. old fish ladder on Colorado's Gunnison River is now considered a success, so federal officials plan to build a second fish ladder on another nearby dam. The \$1.2 million fish ladder built around the Redlands Diversion Dam, has allowed at least 42 endangered Colorado pikeminnow and 27,000 other fish to pass. The Colorado and Gunnison rivers near Grand Junction are home to 650 adult pikeminnow, considered the world's second-largest surviving population of the species. This fall, officials hope to start construction of a \$3.4 million fish ladder around the Highline Diversion Dam on the Colorado. Combined with a plan to tear down the unused Price-Stubb Dam, the project would open another 55 miles of river for the fish. But efforts to tear down the dam have been complicated by a proposal to add a hydroelectric plant. Sources: Mark Ohnascik, *Denver Post*, 7/6/99; *River Currents On Line*, 7/12/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 7/7/99

MT Fish Reclamation - Ted Turner's proposed project to poison about 77 miles of stream in the Cherry Creek area southwest of Bozeman, MT is raising controversy as the state works to implement the largest project of its kind in decades. The goal is to

kill non-native fish species in order to reintroduce native Westslope cutthroat trout. Though poisoning of non-native fish in order to reintroduce natives is not a new practice in Montana or neighboring states, the role of Ted Turner is bringing the project national attention. Opponents say it makes no sense to kill fish in order to reintroduce others, and that water quality and possible contamination of Bozeman's water supply is a concern. Supporters feel the project offers a unique opportunity to safely and economically try to save a dwindling population of Westslope cutthroat trout. Sources: *Bozeman Gazette* 6/29/99; and *River Currents On line*, 7/2/99

Great Lakes Too Clean? - "After 30 yrs of stricter environmental standards" that have dramatically cleaned up the Great Lakes, some fishers are seeking an increase in dumping of strictly regulated nutrients to boost fish numbers. Some fishers say walleye, coho salmon and other game fish catches are declining as the water becomes cleaner. Fisherman Sam Romano said the removal of microorganisms from Lake Michigan has "broken the food chain." Regulated dumping of phosphates from agricultural runoff and sewage treatment water, they say, could stimulate algae growth and increase fish populations. Meanwhile, researchers have discovered what appear to be the first known cancerous tumors on tiny crustaceans living in Lake Michigan, raising new questions about water pollution. The tumors were more prevalent in samples taken close to shore and in predatory species. Sources: *Philadelphia Inquirer*, Raad Cawthon, 5/15/99; Peter Kendall, *Chicago Tribune*, 5/26/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 5/17 and 5/27/99

Petroleum Eating Bacteria - Researchers from *Mississippi State University* (MSU) and the Mississippi Dept. of Transportation have unveiled a new way to clean petroleum-polluted soils with natural bacteria that "eat" gasoline. The process uses "bio-cells," bacteria that already exist in local soils and "are very common at petroleum-contaminated sites," says Mark Zappi of MSU. Early study results show reduction of gasoline at the study's petroleum contamination site to regulatory standards within 2 weeks. Smaller amounts of other petroleum products took several more weeks to remove. Zappi says the process, "simple to construct and operate" can be easily duplicated. Estimated cost runs from \$20 to \$40/yd³, about half the cost

of using a land-fill. Sources: *Biloxi [MS] Sun Herald*, 6/1/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 6/2/99

Western Water Issues

Montana Gov. Marc Racicot (R) and Crow Tribal Chairwoman Clara Nomee signed a "landmark" agreement on 7/6 settling a long-running dispute over water rights on major streams in southeastern Montana. The deal earmarks portions of the Bighorn River, Little Bighorn River and Pryor Creek for the tribe, including storage and natural flow. It also preserves all the river basins from any future water allocations. The state would pay the Crow Tribe \$15 million over the next 10 years to settle a dispute over coal tax and pay for protecting water resources on the reservation.

Meanwhile, speaking at a conference in Boulder, CO, Interior Secretary Bruce Babbitt proposed setting minimum water levels to "keep natural river systems healthy" and touted a three-way approach to enable the West's growing population to meet water consumption needs. Babbitt said water supply problems in the West are the result of allocation and distribution. He told water officials and others that the problems could be solved through (1) better conservation, (2) development of water markets, and (3) enhanced use of underground water storage. "Some Western cities use as much as 40% of their water resources on lawn and landscape maintenance", Babbitt said. "Conservation should begin by recognizing that Western cities were not meant to resemble Brazilian rain forests or suburbs of Minneapolis." Las Vegas Valley Water District investigator Dave Hunt said, "There is a mind-set here that since water is such a necessity for life, God or the government will just take care of it so that there will always be enough. That's the kind of thinking we have to change." Babbitt's speech signaled his "intent to use the final months of the Clinton Administration to continue redirecting water toward environmental uses rather than increased residential growth and agricultural irrigation." He also said that no new dams should be built in the U.S., while several should be removed, noting "many really don't serve much purpose anymore." But he stopped short of calling for removal of any major projects.

Meanwhile, the Interior Dept. began work on new rules to govern water surpluses and shortages in the Colorado River. The new

rules will "spell out" which states will be first in line when there is a surplus water flow and which states get turned away when shortages occur. Arizona wants any new policy to specifically address shortages. Under current regulations, California is guaranteed its full share of 4.4 million acre-ft./yr before Arizona can begin diverting any of its 2.8 million acre-ft. share. And California is legally entitled to surplus water when it exists. Babbitt "has grown increasingly impatient with California" over Colorado River water allocation, as the state has been using nearly 1 million acre-ft./yr more than its allotment.

Late snowfall in Colorado this year enabled the U.S. Bureau of Reclamation to renew plans to intentionally flood the Colorado River near its confluence with the Gunnison River to aid the endangered razorback sucker and Colorado pikeminnow.

Sources: Rene Sanchez, *Washington Post*, 5/16/99; Mark Jaffe, *Philadelphia Inquirer*, 7/19/99; *NPR Morning Edition*, 7/16/99; Erin P. Billings, *Billings Gazette*, 6/17/99; Erica Curless, *Billings Gazette*, 7/7/99; Shaun McKinnon, *Phoenix Arizona Republic*, 5/21 and 6/9/99; Brent Israelsen, *Salt Lake Tribune*, 6/9/99; Tony Perry, *Los Angeles Times*, 6/9/99; Steve Lipsher, *Denver Post*, 5/22/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 5/17, 5/21, 6/2, 6/9, 6/18 7/8 and 7/19/99

Ballast Water Rules Extended

Rules used to prevent foreign "invasive" species from entering the Great Lakes through ship ballast water tanks were extended to all U.S. ports on 7/1. The U.S. Coast Guard is asking all ships to exchange their ballast water at least 200 miles from their U.S. destination, refilling them with sea water. Also, ships that have been outside U.S. waters will be required to state what they did with their ballast water and submit to random inspections, so the Coast Guard can determine if current efforts to ward off invasive species introductions are adequate, or if exchange of ballast water should be mandatory. Because ballast exchanges are time-consuming and can be dangerous, shippers are looking at developing technologies such as filtration, ultraviolet light and the use of heating and centrifugal force to prevent invasive species such as zebra mussels and round gobies from entering U.S. waters.

Speaking of the round goby, recent studies indicate that it is moving toward the Mississippi River Basin headwaters from the Great Lakes via a Chicago area ship canal faster than expected. Negotiations are underway to determine if the canal needs to be poisoned before the gobies reach the Illinois River and gain access to the rest of the Basin. Planned construction of an electric barrier has been delayed, and negotiations continue as to who should pick up the goby eradication and removal costs.

A report by *Cornell University* ecologist David Pimentel estimates that non-native, invasive species cost the U.S. more than \$122 billion annually. And according to an article in *Business Week*, invasive species are fast becoming one of the "most costly ecological problems" in the U.S. The *Environmental Defense Fund* says about 400 of the 958 species federally listed as threatened or endangered are at risk because of invasive species. The magazine says that efforts to combat the invaders "have been far too fragmented," as 24 federal agencies exercise some authority over their regulation. A Clinton Administration order (see *River Crossings Vol. 8, No. 2*) calling for an "Invasive Species Council" "goes part way toward rectifying the situation." Some environmentalists have called for the creation of a "white list" that would ban entry of plants and animals until they are proven not to be a threat.

Sources: *AP/New York Times*, 5/25/99; Dan Weikel, *Los Angeles Times*, 7/1/99; Gene Linn, *Journal of Commerce*, 7/9/99; Ellen Licking, *Business Week*, 5/24/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 2/11, 5/25 7/1, and 7/9/99

Climate Change Update

Global warming, environmental degradation and rising populations in ecologically vulnerable areas are likely to increase the frequency and severity of natural disasters, according to a report issued on 6/24 by the *International Federation of Red Cross and Red Crescent Societies*. The 1999 *World Disasters Report* said last year's disasters were the worst on record, driving an estimated 25 million people – or 58% of the world's refugees – from their homes. For the first time, "environmental refugees" fleeing droughts, floods, deforestation and degraded land outnumbered those displaced by war, the report said. Red Cross Pres. Astrid Heiberg emphasized the phenomenon

of "chain reaction" disasters. Indonesia, for example, she said, started out with a drought, then fires, then lack of food, and then riots...So it's a long chain reaction that is hitting more and more people.

Also a team of earth scientists and infectious disease experts, reporting in the journal *Science*, said there is a link between ocean warming and epidemic outbreaks. They said that warm ocean waters increase the amounts of rain and vegetation, which can serve as a breeding ground for disease-carrying mosquitoes. The scientists from NASA's *Goddard Space Flight Center* and the *Walter Reed Army Institute of Research* said health officials could use rising ocean temperatures as warning signs for upcoming epidemics. The study focused on the deadly Rift Valley Fever that has plagued eastern Africa, where scientists were able to use weather patterns to predict 3 major outbreaks of the disease as much as 5 months beforehand.

An article in the journal *Nature*, also said that rising winter temperatures will generate more severe storms in western North America and western Europe. Drew Shindell, based at both *Columbia University* and the *Goddard Institute for Space Studies*, said average winter temperatures in the Northern Hemisphere have risen 9 °F in the last 30 years – ten times more than the global average. Shindell said, "Greenhouse gases may be affecting the weather a lot more than we thought." Researchers from *Columbia University* said winters in Europe, Asia and North America have become warmer and wetter in the last 35 years as a result of rising greenhouse gases.

Meanwhile, researchers at *Nehru University* in New Delhi "warned that glaciers in the Himalayas are melting at an alarming rate and could cause a catastrophe if meltwater lakes overflow into surrounding valleys." *New Scientist* magazine reported that all the glaciers in the central and eastern Himalayas could disappear by 2035 if present trends continue. The Indian study is consistent with others that have shown glaciers are retreating worldwide.

Winter warming "is ultimately caused by global warming, but the more proximate cause is a change in the jet stream." A NASA study says warming has accelerated the jet stream, carrying more heat from the Pacific Ocean to North America. Cities in the northeastern U.S. could see a large increase in the number of days on which the thermometer reaches 90 °F or higher. CBS

"*Evening News*" Reporter Randall Pinskyton said, "Right now in (northeastern) cities, 90 °+ readings only happen 10-15 times/yr, but researchers warn, in the next century, global warming could make these dog days a lot more common." *Environmental Defense Fund's* Michael Oppenheimer says New York, Washington, and St. Louis, could have as many as eighty 90° degree days 100 years from now, and Dallas could have 130.

A report in the journal *Nature* says that human activities are responsible for most of the gases that have eroded Earth's protective ozone layer. The study used snow to measure trapped gases and determine atmospheric history. The report found that detectable amounts of major ozone-



depleting gases were not present in the atmosphere before humans began using chlorofluorocarbons, halogens and chlorinated solvents for air conditioning, aerosol sprays and dry cleaning. The study found "no significant natural emissions" involved in the ozone layer's depletion. NASA's James Butler said, "We've known about this for a long time. We just didn't have any measurements to say that it's true".

A "major" study released in early June by the *UN* and *World Meteorological Organization* said aircraft emissions are a growing factor in climate change and "stricter regulation and new levies on the aviation sector could be needed." The study said the "much vaunted advances in aircraft technology would not be enough to keep future pollution at bay, and warned that further measures might be needed." Although aircraft emissions currently account for as little as 3% of the effect of fossil fuels on the atmosphere, that could grow by 4-5 times over the next 50 yrs, the study said.

The *World Wildlife Fund* (WWF) and the Redmond, WA-based *Marine Conservation Biology Institute* (MCBI) say that global warming may also be causing a "continuous El Nino" and threatening the world's oceans. The report, released on 6/8, is a

synthesis of recent academic studies looking at the broad picture of global warming. It says that warmer waters are leading to decreases in zooplankton populations, seabirds and marine mammals; shrinking coral reefs; causing harmful algae blooms; and contributing to the decline of salmon. In many cases, species appear to be suffering from lack of food connected to ocean warming, said Elliott Norse, head of the MCBI. If recent trends continue, warmer ocean temperatures could push the entire salmon species out of the Pacific Ocean in 40-50 yrs, said David Welch of *Fisheries and Oceans Canada*, a contributor to the report. Critics, skeptical of the report, included John Carlisle, director of the *National Center for Public Policy Research*. He said, "There is no firm evidence that man-made global warming is even occurring. The fact is that the Earth's temperature is naturally fluctuating."

However, a study published in the 6/10 issue of the journal *Science* concluded that shifting habitats of butterflies in Europe may be a sign that global warming is occurring. The U.S.-led international study found that 66% of the species studied had moved between 22 and 150 mi. farther north over the past 30-100 yrs, while only 3% had moved farther south. The continent is 1.4 °F warmer than it was 100 yrs ago, and the average temperatures experienced by butterflies then is now found 75 mi. farther north.

Meanwhile, the European Space Agency's *Living Planet Program* will conduct a \$640 million project, the biggest ever investigation into the Earth's climate. It will use orbiting satellites to study the global climate system; collect data that could help predict natural disasters; and show the effects of global warming. The first mission announced on 6/7, will be a 3 yr effort to examine polar ice caps. The next mission will investigate the amount of moisture and salt in the soil.

Finally, a year-long, interfaith campaign designed to develop support for action against global warming is getting underway in Michigan, Pennsylvania, West Virginia and Iowa. Richard Killmer, environmental justice director for the *National Council of Churches* (NCC), sponsor of the initiative, says the four states "have been chosen for specific reasons" related to their political and industrial situations. For example, Michigan is the center of the auto industry, while Iowa has the earliest presidential caucuses, Killmer said. Interfaith groups at the state level are planning "extensive

educational, political and media strategies; including lobbying legislators, unions and business leaders; getting churches involved in energy conservation; and placing opinion pieces in local media. The first of several training sessions for activists was held in mid June in Dewitt, MI. The 4-state effort is the latest chapter in an interfaith global warming project launched by the NCC in 1998. For more information on the NCC's *Eco-Justice Working Group*, including its campaigns on global warming and other issues, visit <http://www.webofcreation.org/NCC/Workgrp.html>

Sources: Clare Nullis, *AP/Los Angeles Times*, 6/24/99; Paul Brown, *London Guardian*, 6/24/99; Elizabeth Olson, *New York Times*, 6/24/99; Alex Kirby, *BBC*, 6/24/99; *Swiss Radio International*, 6/24/99; *AP/nando.net*, 6/3/99; *Reuters/Baltimore Sun*, 6/3/99; *Evening News*, *CBS*, 6/2/99; Thomas Maugh, *Los Angeles Times*, 6/3/99; Charles Arthur, *London Independent*, 6/3/99; Ross Anderson, *Seattle Times*, 6/8/99; Michael Paulson, *Seattle Post-Intelligencer*, 6/8/99; Barrie McKenna, *Toronto Globe & Mail*, 6/9/99; Al Kamen, *Washington Post*, 6/9/99; Ann Schrader, *Denver Post*, 6/24/99; Mark Jaffe, *Philadelphia Inquirer*, 6/25/99; Lee Siegel, *Salt Lake Tribune*, 6/25/99; *AP/Houston Chronicle*, 6/10/99; Adam Sherwin, *London Times*, 6/8/99; *BBC Online*, 6/7/99; NCC release, 6/10/99; and National Journal's *GREENWIRE, The Environmental News Daily*, 5/28/98, 6/2, 6/3, 6/7, 6/8, 6/9, 6/10, 6/14, 6/24, and 6/25/99

Genetic Engineering Issues

When it comes to genetically modified organisms (GMOs), "Americans (1) are more ignorant of the science, (2) get less news about the issue and (3) are more trusting of government regulators than their European counterparts," according to a study published in the latest edition of the journal *Science*. Researchers at the *London School of Economics and London Science Museum* conducted public opinion surveys on the issue in 1996 and 97 in the U.S. and 17 European countries. Japanese consumer groups have lobbied "intensively" for significant restrictions on genetically altered foods, and consider labelling "just one step" in their anti-GMO campaign.

Meanwhile, scientists at *Cornell University* reported in the 5/20 issue of the journal *Science* that altering plant genes can have unintended consequences. Their work revealed that pollen from genetically mod-

ified corn could be fatal to the monarch butterfly, casting a shadow over the emerging bioengineered crop industry. But because the biotechnology industry is in its infancy and "the stakes are high and the future is unclear," a consensus on the safety of genetically altered food and plants "is not likely to be reached for some time." Industry representatives say the field has been "thoroughly studied" by federal regulators. Val Giddings of the *Biotechnology Industry Organization (BIO)*, a consortium of more than 850 biotechnology companies and academic institutions, said "there's an enormous wealth of information that says DNA-altered food is as safe as/or safer than" any other.

But opponents point to the *Cornell* study showing that pollen from corn infused with genes from the bacterium *Bacillus thuringiensis* (Bt) is toxic to monarch butterfly larvae when sprinkled on milkweed, the caterpillars' main food. Bt is a natural bacterium that kills caterpillars, corn borers and other worm-like pests. Using the altered corn, farmers have been able to reduce the amount of pesticides applied to kill pests. But under laboratory conditions, almost half of the monarch butterfly larvae that ate milkweed dusted with Bt corn pollen died within 4 days, compared to 100% survival for larvae that ate Bt-free milkweed. Implications of the study are ominous since the U.S. "corn belt" is the heart of the monarch butterfly's breeding range, and about 20% of the U.S. corn crop this year is bioengineered Bt corn. "Several scientists have expressed concern that if the new study's results are correct, then monarchs – which already face ecological pressures, but have so far managed to hold their own – may soon find themselves on the endangered species list."

Giddings writes in a letter to *Nature* that "industry is fully committed to exploring the significance of this report" but that "outside the laboratory, most Monarch larvae would never encounter significant amounts of corn pollen. This means the real potential for any negative impact is negligible". But the *European Commission (EC)* responded to the study saying it will freeze the approval process for genetically altered corn, warning that similar products developed by *Monsanto* and *Novartis* could also be affected if *European Union (EU)* scientists conclude they threaten the environment. A leading member of the European Parliament said that biotechnology companies should be made liable for any problems caused by their products.

Discussions about the need "for an international science-based review to assess benefits and risks of genetically modified foods" dominated an international conference of farm industry leaders held in St. Louis in late May. At the *World Agricultural Forum's 1999 World Congress*, Liam Downey, director of an Irish agricultural education program called *TEAGASC*, suggested that an international scientific review could inject "some rationale into what is becoming an increasingly emotional debate." Other experts agreed, but there was no consensus about who would conduct such an investigation – it could not be done by governments or private industry, but would have to be done by some sort of global project. French Farm Minister Jean Glavany said he would not rule out a moratorium on genetically modified corn if it threatens the environment, and he appointed an expert panel for advice on the matter. In the UK, the Green Party said voters should make this summer's elections to the European Parliament a referendum on the government's handling of this issue.

U.S. Agriculture Secretary Dan Glickman announced in a 7/13 speech at the *National Press Club* a strengthening of federal oversight for genetically modified crops, and reassured consumers that the altered foods are safe. He also announced formation of a 25 member committee, made up of representatives from government, agriculture, environmental and consumer groups, and ethicists, that will advise him on biotech issues. He said voluntary labeling of modified foods should be looked at because consumers "generally want to know what's in their food". He said that long-term studies of biotech crops will be conducted by a network of 12 regional centers the Clinton Administration plans to establish. The centers would evaluate the products for their effects on the environment, consumer health and agricultural pests.

Meanwhile, bug-resistant crops have eaten away at demand for some insecticides, placing the annual \$33 billion global pesticide market on the verge of a "shake-up". Cotton farmers, for example, have reduced pesticide use by 12% in the last 3 yrs. Overall, St. Louis-based *Monsanto Co.* "has emerged as a big winner." The company developed genetically modified seeds resistant to the company's *Roundup* weed-killer, making it much easier to use. Madison, NJ-based *American Home Products Corp.* "is seriously considering" quitting the pesticide business." The company's *Cyanamid* unit "has suffered the

most from *Roundup*'s rejuvenation." But Switzerland's *Novartis AG* and London based *AstraZeneca PLC* "are gearing up to go head-to-head" with *Monsanto*. *AstraZeneca* said it has received U.S. approval to market *Touchdown*, which has a chemistry similar to *Roundup*'s, so it can be used on *Roundup*-resistant seeds. And *Novartis* is working on a gene that could immunize plants to a new class of herbicides.

On a positive environmental note, genetic scientists at the *University of Pennsylvania* are working to engineer a plant "capable of sucking up cadmium, arsenic and mercury" in soil. Researcher Philip Rea said plants have a natural defense to naturally occurring heavy metals, which he and his colleagues are trying to take advantage of. Rea said, "The options are to find a native plant that has the capacity to do the job, or engineer a plant that can do it for you." Rea has isolated and cloned a gene found in a "weedy little sprout" called *Arabidopsis thaliana* that gives the plant the ability to soak up heavy metals. The next step will be to insert the gene into a plant that might be used in field tests.

Meanwhile, Canadian researchers say they have discovered a genetically modified form of geraniums that could absorb metal and organic pollutants, helping to clean "everything from abandoned gas stations to old mining lands." The geraniums may be the only known plant species that has the ability to absorb both multi-metal and organic chemical contaminants. When planted in contaminated soil samples the familiar plants cleaned the soil to the point that it could later be used for farming. The team found that without exhibiting any signs of toxic stress, the plants, in 2 wks., can soak up as much as 3,300 mg of cadmium, 18,700 mg of lead, 6,400 mg of nickel and 650 mg of copper for every kg of plant tissue.

Scientists at the *University of Toronto* have successfully engineered a microorganism that forms ethanol using only carbon dioxide and sunlight. In a process they have patented, the scientists took genes from a bacterium that naturally forms alcohol and inserted them into a Cyano-bacterium, which performs photosynthesis like plants. The new genes produce "foreign" enzymes that yield alcohol as one of the natural side-products of photosynthesis. The alcohol yield is limited, but scientists hope to improve it by inserting more foreign genes into the microbe

Up to now, most genetic engineering has involved transplanting genes from one species to another. But a new method, called chimeraplasty, makes it simpler to analyze and change genes already present in plants. Researchers hope the new method will be more acceptable to environmentalists. However, it may be several years before plants modified through chimeraplasty will be available to farmers.

Clive Cookson, news analyst for the *Financial Times* says that the monarch butterfly study, mentioned earlier, has moved attention away from potential human health threats caused by genetically modified foods, back to "the environmental impact of growing such crops." Cookson points to the butterflies as "the most serious evidence so far that modified crops can cause environmental damage." But Cookson concludes that, "analysts see little chance that a potential threat to monarch caterpillars will stop ... the 'economic juggernaut' of the modified food industry." Experts warned the *National Academy of Sciences* in late May that "More problems like monarch [butterfly] fatalities will occur" unless the U.S. government does a better job of regulating biotechnology. A 12 member panel of academy scientists is writing a review of the risks and benefits of biotech crops. Margaret Mellon of the *Union of Concerned Scientists* said biotechnology regulation should be the sole province of the USEPA rather than the three agencies currently involved. But Robert Harness of the St. Louis-based *Monsanto Corp.* said the government's current regulatory structure works fine.

Sources: Michiyo Nakamoto, *Financial Times*, 7/15/99; Anita Manning, *USA Today*, 6/29 and 7/14/99; Glen Martin, *San Francisco Chronicle*, 5/20/99; Rick Weiss, *Washington Post*, 5/20/99; *Reuters/MSNBC*, 5/20/99; *Wall Street Journal*, 5/21/99; Michael Smith, *Financial Times*, 5/21 and 6/24/99; *New York Times*, 5/21/99; *Reuters/PlanetArk*, 5/28 and 6/24/99; Oliver Poole, *London Telegraph*, 6/24/99; Tim Todd, *Bridge News/Journal of Commerce*, 5/27/99; Michael McCarthy, *London Independent*, 5/26/99; Ingersoll/Kilman, *Wall Street Journal*; 7/14/99; *Journal of the National Academy of Science*, 7/20/99; Carolyn Abraham, *Toronto Globe & Mail*, 7/16/99; *PR Newswire*, 5/19/99; Scott Kilman, *Wall Street Journal*, 6/16 and 7/20/99; Mark Jaffe, *Philadelphia Inquirer*, 6/14/99; Edwin Colyer, *Financial Times*, 5/21, 5/22, and 5/23/99; Bill Lambrecht and Robert Steyer, *St. Louis Post-Dispatch*, 5/25/99 and *National*

Journal's GREENWIRE, The Environmental News Daily, 5/20, 5/21, 5/24, 5/25, 5/28, 6/14; 6/16, 6/24, 6/29, 7/14, 7/16 and 7/20/99

Deformed Dragonflies

Deformities were found in dozens of dragonflies studied last summer in northern Minnesota, but experts are unsure what caused the problem. Researchers discovered the deformities while surveying dragonfly populations at 90 sites between May and September 1998. Dragonfly "skins", shed as the insects molted from nymph to adult stage, were found with deformities, including misshapen mouth parts, abdomens, antennae, and occasional missing leg segments. Between 4 and 38% were deformed, depending on the site. The deformities were not found in samples taken from several other sites.

One researcher, Bill Smith of the Wisconsin Dept. of Natural Resources, said he has seen tens of thousands of dragonfly specimens over the past decade in Michigan, Minnesota and Wisconsin and that nearly all have been normal, except for some that came from a few Michigan streams near former iron mines. Environmental scientists and Minnesota officials say it's too early to say what caused the deformities, but they do not appear to be related to frog deformities found in other parts of Minnesota. The *Rivers Council of Minnesota* has called for further investigation.

Sources: Tom Meersman, *Minneapolis Star Tribune*, 6/9/99; and *National Journal's GREENWIRE, The Environmental News Daily*, 6/10/99

Environmental Interest Down

Americans are increasingly pessimistic about solving environmental problems, so much so that they're starting to lose interest in the issue altogether, say researchers who reviewed public opinion surveys. Findings released on 6/1 by the nonprofit *Public Agenda on behalf of the American Geophysical Union*, indicate that 40% of Americans said in 1997 that they worried a great deal about the ozone layer, down from 51% just 8 yrs. earlier. And 24% said they cared much about global warming, down from 35% in 1989. The cause for greatest concern for respondents – water pollution – also experienced a decline in interest. *Villanova University* administrator John

Immerwahr, who led the review, blamed the declines not on apathy but on "frustration with invisible, long-term processes like global warming."

Also, according to a national poll conducted jointly by Democratic pollster Peter Hart and Republican pollster Robert Teeter, American high school students are not as "green" as expected. When asked which statement was closer to their own view, "Protecting the environment should be one of our country's top priorities, even at the cost of some jobs or higher prices," or "Protecting the environment is important, but not at the cost of some jobs or higher prices," 53% chose protection even if it cost jobs or high prices, but 43% chose jobs and lower prices over the environment. The poll, which surveyed 501 high school students May 17-24, was commissioned by the *Close Up Foundation* and *Prentice Hall*.

Sources: *AP/San Francisco Chronicle/Examiner online*, 6/2/99; Charlie Cook, *Off to the Races*, 6/22/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 6/3 and 6/28/99

Population Growth and Species Extinctions

World population may have passed the 6 billion mark in mid July, according to the U.S. Census Bureau. Despite a gradual slowing of the overall growth rate, world population doubled in less than 40 yrs, and it took only 12 yrs to jump from 5 to 6 billion. An estimated 78 million people are born each year, equivalent to adding a city the size of San Francisco every 3 days, or the combined populations of France, Greece and Sweden every year. If the trends continues, the U.S. will double its population of

270 million in about 60 yrs. *Population Action International*, a coalition of population groups, says the effect of continued population growth "will be sweeping," with human population growth leading to the extinction of at least 27,000 plant and animal species/yr.

Sources: *London Independent*, 7/19/99; Robin Wright, *Los Angeles Times*, 7/17/99 and National Journal's GREENWIRE, *The Environmental News Daily*, 7/19/99

Religion and the Environment

A coalition of Catholics, liberal Protestants, evangelicals and Jews announced in late May a \$16 million decade-long initiative to help give environmentalism a larger role in religion. The New York-based *National Religious Partnership for the Environment* said that \$16 million pledged from member denominations will go to (1) local and national educational programs, (2) environmental publications for clergy and laity, and (3) the "integration of environmental projects into their human service agencies."

In mid May, Roman Catholic bishops from the Northwest and British Columbia released a draft document outlining a theological view about caring for the Columbia River and the environment. The bishops called the river "living water," and the document included pledges or goals to (1) stop using fertilizers and pesticides at Catholic schools and churches, (2) reduce gold in church ornaments in order to encourage responsible mining practices, and (3) restrict use of snowmobiles and off-road vehicles. It will serve as the foundation for a pastoral letter to be completed next year on the Columbia River watershed. The resulting pastoral letter is expected to guide

Catholics and "spark discussion" among environmentalists, scientists and business people in the region. In a *Portland Oregonian* op-ed, Mark O'Keefe expands on the significance of the bishops' document, saying that in the past, environmentalists have blamed Christianity's belief that humans should reign over the Earth for "much of the rape and pillage of the Earth's natural resources." However, Christianity's shift emphasizes "the duty of humanity to care for the Earth," a change that could influence environmental issues or help explain the "why" of environmental protection.

Sources: John Rivera, *Baltimore Sun*, 5/28/99; George Bullard, *Detroit News*, 5/27/99; Mark O'Keefe, *Portland Oregonian*, 5/12 and 5/16/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 5/19 and 5/28/99

Recent Publications

Sheehan, R.J., R.C. Heidinger, P.S. Wills, M.A. Schmidt, G.A. Conover, and K.L. Hurley. 1999. Guide to the Pallid Sturgeon Shovelnose Sturgeon Character Index (CI) and Morphometric Character Index (mCI). Fisheries Research Lab, S. Illinois Univ., Carbondale, IL. SIUC Fish Bull. 14, 16 pp.

Kincaid, H.L., L.J. Mengel, M.J. Gray, and S. Brimm. 1999. National Fish Strain Registry -- Paddlefish and Sturgeon, Species Tables of Reported Populations. U.S. Fish and Wildlife Service. Resource Publ. 53 pp.

USGS. 1999. Ecological status and trends of the Upper Mississippi River System 1998: A report of the Long Term Resource Monitoring Program. USGS, Upper Midwest Environ. Sciences Center, La Crosse, WI. 54601. LTRMP 99-T001. 236 pp.

Meetings of Interest

August 29 - Sept. 2: 129th Annual Meeting of the American Fisheries Society, Adam's Mark Hotel, Charlotte, NC. Contact: Betsy Fritz, (301) 897-8616, ext. 212, bfritz@fisheries.org

Sept. 7-9: International Shallow Water Fisheries Sonar Conference. University of Washington, Seattle. Contact: Melanie Milnes, mmilnes@biosonicsinc.com

Sept. 16-17: Improved Decision-Making

for Water Resources: The Key to Sustainable Development for Metropolitan Regions. Univ. of Chicago, Chicago, IL. Contact: UIC OCEPS, (800) 453-3728 or www.uic.edu/depts/oceps/sea-grant/

Sept. 19-24: International Conference on Diseases of Fish and Shellfish, Rodos Palace Hotel and Conference Centre, Rhodes, Greece. Contact: Maura Hiney, 011/353-91-524411 or nuigalway.ie.

Sept. 21-22: Vegetation of the Upper Mississippi and Illinois River System: Status, Management and Ecological Systems, Radisson Hotel, La Crosse, WI. Contact: Penny Tiedt, (608) 785-6503, FAX (608) 785-8221 or rada@mail.uwlax.edu

Sept. 23-25: International Conference of the Society for Ecological Restoration, Presidio, San Francisco, CA. Contact: SER, (608) 262-9547, (608) 265-8557 or ser@vms2.macc.wisc.edu

Oct. 13-16: Conservation Planning -- From Sites to Systems, Natural Areas Assoc. & The Wildlands Project, Tucson, AZ. Contact: www.twp.org

Oct. 19-22: Predicting Species Occurrences - Issues of Scale & Accuracy, Snowbird, UT. Contact: (202) 885-2750, www.ets.uidaho.edu/coop/1999_symposium.htm

Oct. 24-27: 4th Microcomputer Applications in Fish and Wildlife Conference, Caesars Tahoe Hotel, Stateline, NV.

Contact: Jeff Trollinger, (804) 367-1185 or jtrollinger@dgif.state.va.us

Oct. 27-29: Confronting Uncertainty: Managing Change in Water Resources and Environment Conference. Contact: Yassine Djebbar, (604) 436-6714 or Ydjebbar@gvrd.bc.ca.

Oct. 27-30: Spatial Processes and Management of Fish Populations Symposium, Anchorage, AK. Contact: Brenda Baxter, (907) 474-6701.

Nov. 16-17: Wetlands & Remediation, Salt Lake City, UT. Contact: (614) 424-6510 or Nehrungk@battelle.org

Nov. 29 - Dec. 3: Congress on Recreation and Resource Capacity, Snowmass Village, Aspen, CO. Contact: Susan Scott Lundquist, (970) 491-4865 or FAX (970) 491-2255.

Dec. 4-9: Watershed Management to Protect Declining Species, Seattle, WA. Contact: Amer. Waterworks Assoc., (425) 649-7140

Congressional Action Pertinent to the Mississippi River Basin

Endangered Species Act Amendments

S. 1100 and S. 1210: J. Chafee, R/RI. Addresses designation of critical habitat, and assists in the conservation of endangered and threatened species of fauna and flora found throughout the world.

S. 1305: C. Thomas, R/WY: Improves the listing, recovery planning, and delisting process, and for other purposes.

H.R. 494, 495 and 496: W.M. Thomas, R/CA. Endangered Species Fair Regulatory Process Reform, Land Management Reform and Criminal and Civil Penalties acts.

H.R. 960: G. Miller, D/CA. Strengthens the commitment to protect wildlife, safeguard children's economic future, and provide assurances to local governments, communities, and individuals.

H.R. 1101: R. Pombo, R/CA. Improve sthe ability to prevent flood disasters.

H.R. 1763: K. Calvert, R/CA. Limits required mitigation costs for public construction projects to less than 10% of total project cost.

H.R. 2017: W. Herger, R/CA. Enables Federal agencies responsible for the preservation of threatened and endangered species to rescue and relocate individuals that would be taken in the course of certain reconstruction, maintenance, or repair of Federal or non-Federal manmade flood control levees.

H.R. 2131 and 2253: K. Calvert, R/CA. Prohibits the requirement to mitigate for impacts of past activities, and the use of any

item or information obtained by trespassing on privately owned property, or otherwise taken from privately owned property without consent of the property owner.

Environment

S. 352: State and Local Government Participation Act of 1999, C. Thomas, R/WY and H.R. 2029: G. Radanovich, R/CA. Amends the National Environmental Policy Act (NEPA) of 1969 requiring Federal agencies to consult with State, county, and local agencies and governments on environmental impact statements.

S. 481: Environmental Crimes and Enforcement Act of 1999, C.E. Schumer, D/NY. Provides for protection of government employees and the public from environmental crimes.

S. 1066: P. Roberts, R/KS. Amends the National Agricultural Research, Extension, and Teaching Policy Act of 1977 to encourage use of and research into agricultural best practices to improve the environment, and for other purposes.

S. 1090: J. Chafee, R/RI: Reauthorizes and amends the Comprehensive Environmental Response, Liability, and Compensation Act of 1980.

S. 1279: R. Kerrey, D/NE. Improves environmental quality, public use and appreciation of the Missouri River and provides additional authority to the Army Corps of Engineers to protect, enhance, and restore Mo. River fish and wildlife habitat.

H.R. 408: C. Peterson, D/MN. Amends the Food Security Act of 1985 to expand the number of acres authorized for inclusion

in the Conservation Reserve Program (CRP).

H.R. 525: Defense of the Environment Act of 1999, H.A. Waxman, D/CA. Requires any Congressional provision that reduces environmental protection to: (1) identify and describe the provision, (2) assess the extent of the reduction, (3) describe actions taken to avoid the reduction, and (4) recognize any statement of the Comptroller General in assessing the reduction.

H.R. 728: K. Lucas, D/KY. Amends the Watershed Protection and Flood Prevention Act providing cost share assistance for rehabilitation of structural measures constructed as part of water resource projects previously funded by the Secretary of Agriculture.

H.R. 1836: D. Bereuter, R/NE. Balances the wind and water erosion criteria and wildlife suitability criteria for the 18th CRP signup.

Hydropower

S. 740: L. Craig, R/ID and E. Towns, D/NY. Amends the Federal Power Act to improve hydroelectric licensing processes by granting the FERC statutory authority to better coordinate participation of other agencies and entities, and for other purposes.

Population Growth

H. Con. Res 17: Population Growth Resolution T.C. Sawyer, D/OH. Expresses the sense of Congress that the U.S. should develop, promote, and implement, at the earliest possible time and by voluntary means consistent with human rights and

individual conscience, the policies necessary to slow U.S. population growth.

Property Rights

S. 333: P. Leahy, D/VT, H.R. 598: R. Santorium, R/PA, and H.R. 1950: Sam Farr, D/CA. Amends the Federal Agriculture Improvement and Reform Act of 1996 to improve the farmland protection program.

S. 1028: O. Hatch, R/UT. Simplifies and expedites access to Federal courts for parties whose rights and privileges, secured by the Constitution, have been deprived by actions of Federal agencies, entities or officials acting under color of State law.

S. 1202: B.N. Campbell, R/CO. Requires a warrant of consent before land inspections may be carried out to enforce any law administered by the Secretary of the Interior.

H.R. 1002: Declaration of Taking Act,, D. Hunter, R/CA. Amends the subject act to require that all government condemnations of property proceed under that Act.

H.R. 1142: D. Young, R/AK. Ensures that landowners receive equal treatment to the government when property must be used.

Public Lands

S. 338: B.N. Campbell, R/CO; S. 568: C. Thomas, R/WY and H.R. 154: J. Hefley, R/C. Establish fee systems for commercial filming activities on public lands.

S. 446: B. Boxer, D/CA. Provides for permanent protection of U.S. resources in the year 2000 and beyond.

S. 510: B. Campbell, R/CO and H.R. 883: D. Young, R/AK. Preserves U.S. sovereignty over public and acquired lands, and preserves state sovereignty and private property rights in non-federal lands surrounding public and acquired lands.

S. 532: D. Feinstein, D/CA and H.R. 1118: (T. Campbell, R/CA. Increases funding to resume state grant funding for the Land and Water Conservation Fund and development of conservation and recreation facilities in urban areas under the Recreation Recovery Programs.

S. 826: C. Thomas, R/WY. Limits federal acquisition of lands located in States where 25% or more of the land in the State is owned by the U.S.

S. 1049: F. Murkowski, R/AK, and H.R. 1985: B. Cubin, R/WY. Improves administration of oil and gas leases on Federal lands, and for other purposes.

H.R. 488: Northern Rockies Ecosystem Protection Act of 1999, C. Shays R/CT. Special designation of lands in the states of ID, MT, OR, WA, and WY.

H.R. 701: D. Young, R/AK and H.R. 1118 T. Campbell, R/CA. Provide funding for Land and Water Conservation Fund, Urban Parks and Recreation, and Teaming With Wildlife.

H.R. 798: G. Miller, D/CA. Provides for permanent protection of U.S. resources in FY 2000 and beyond through **Land and Water Conservation Fund** funding, **Urban Parks and Recreation** and various other conservation programs.



H.R. 1199. R.W. Pombo, R/CA. Prohibit expenditure of **Land and Water Conservation Funds** for new National Wildlife Refuges without Congressional authorization.

H.R. 1207: B.F. Vento, D/MN. Prohibits the U.S. government from entering into agreements related to public lands without Congressional approval.

H.R. 1284: Minnesota Valley Refuge Bill, D. Young, R/AK. Protects the Minnesota Valley National Wildlife Refuge and protected species to ensure that scarce refuge land in and around the Minneapolis, MN metro area are not subjected to physical and auditory impairment.

H. R. 1396: C. McKinney, D/GA. Saves taxpayers money, reduces the deficit, cuts corporate welfare, and protects and restores America's natural heritage by eliminating the fiscally wasteful and ecologically destructive commercial logging program on Federal public lands, and facilitates the

economic recovery and diversification of communities dependent on the Federal logging program.

H.R. 1500: J. Hansen, R/UT. Accelerates the Wilderness designation process by establishing a timetable for completion of wilderness studies on Federal lands.

H.R. 2222: G. Miller, D/CA. Establishes fair market value pricing of Federal natural assets, and for other purposes:

Regulations

S. 746: Regulatory Improvement Act of 1999, S.M. Leven, D/MI. Improves the ability of Federal agencies to use scientific and economic analyses to assess cost-benefits and risk assessments of regulatory programs.

H.R. 1864: J. Hansen, R/UT. Standardizes public hearing processes for Federal agencies within the Dept. of the Interior.

H.R. 1866: J. Hansen, R/UT. Provides a process for the public to appeal certain decisions made by the National Park Service and the U.S. Fish & Wildlife Service.

Tennessee Valley Authority

S. 123: TVA Funding Act, R.D. Feingold D/WI. Phases out Federal funding for the Tennessee Valley Authority.

Water Resources

S. 294: R. Wyden, D/OR. Directs the Secretary of the Army to develop and implement a comprehensive program for fish screens and passage devices.

S. 507: Water Resources Development Act, J. Warner R/VA and H.R. 1480: R. Shuster, R/PA. Provides for construction of various projects in U.S. rivers and harbors.

S. 685: M. Crapo, R/ID and H.R. 2456. Mike Simpson, R/ID. Preserves state authority over water within their boundaries and delegates states the authority of Congress to regulate water.

H.R. 1444: P. DeFazio, D/OR. Authorizes the Secretary of the Army to develop and implement projects for fish screens, fish passage devices, and other similar measures to mitigate adverse impacts of irrigation system water diversions in the states of OR, WA, MT and ID.

H. Con. Res. 86: E. Blumenauer (D/OR). Concurrent resolution expressing the sense of Congress regarding Federal decisions, actions, and regulations affecting water.

Water Quality

S. 20: Brownfield Remediation and Environmental Cleanup, F.R. Lautenberg D/NJ. Directs EPA to establish a grant program for States and local governments to inventory and conduct site assessments of brownfield sites. Defines brownfield sites as facilities suspected of having environmental contamination that could limit their timely use and can be readily analyzed.

S. 188: Ron Wyden, D/OR. Amends the Federal Water Pollution Control Act (FWPCA) to authorize the use of State revolving loan funds for construction of water conservation and quality improvements.

S. 493: P. Sarbanes, D/MD. Requires the U.S. Army, Corps of Engineers to conduct pilot projects on toxic microorganisms in tidal and non-tidal waters.

S. 669: P. Coverdell, R/GA. Amends the

FWPCA to ensure compliance by Federal facilities with pollution control requirements.

S. 914: B. Smith, R/NH and H.R. 828: J. Barcia, D/MI. Amends the FWPCA requiring discharges from combined storm and sanitary sewers to conform to the *Combined Sewer Overflow Control Policy* of the USEPA.

S. 968: B. Graham, D/FL. Authorizes USEPA to make grants to State agencies with responsibility for water source development, for the purposes of maximizing the available water supply and protecting the environment through the development of alternative water sources, and for other purposes.

H.R. 155: Municipal Biological Monitoring Use Act, J. Hefley, R/CO. Amends the Clean Water Act.

H.R. 2328: J. Sweeney, R/NY. Amends the FWPCA to reauthorize the Clean Lakes Program.

H.R. 684: Farm Sustainability and Animal Feedlot Enforcement Act, G. Miller,

D/CA. Amends the Clean Water Act.

H.R. 1290: W.B. Jones, R/NC. Amends the FWPCA related to wetlands mitigation banking.

H.R. 1549: P. Visclosky, D/IN. Amends the FWPCA to establish a National Clean Water Trust Fund to carry out projects to restore and recover U.S. waters from damages resulting from FWPCA violations.

H.R. 1578: J. Hostettler, R/IN. Amends the wetland conservation provisions of the Food Security Act of 1985 and the FWPCA to permit unimpeded use of privately owned crop, range, and pasture lands that have been used for the planting of crops or the grazing of livestock in at least 5 of the preceding 10 years.

H.R. 1712: Bart Stupak, D/MI. Amends the FWPCA to authorize an estrogenic substances screening program.

H.R. 2449: Charles Norwood, R/CA. Amends the FWPCA relating to Federal facilities pollution control.

Source: Congressional Affairs Update, USFWS, 6/2 and 6/25/99



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River Crossings

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Missouri River Flow Analysis

The U.S. Army, Corps of Engineers has identified fall 1999 as the target timeframe for completion of their "review and update" of the *Master Water Control Manual for the Missouri River*. When finished, this manual will be used as a strict guideline for release of water from the mainstem flood control and hydropower dams.

This summer the *Missouri River Natural Resources Committee* (MRNRC) and MICRA partially funded a project to analyze existing middle Missouri River data and develop a series of hypothetical relationships between discharges and "catch per unit effort" (cpue) for selected fish species. This work was developed under contract to *Rivers Corporation*, a Nebraska nonprofit foundation, that had previously been engaged in organizing much of the available biological, hydrological and physical data.

The MRNRC determined that insight into these relationships is essential for development of recommended flows from Fort Randall and Gavins Point dams in order to help improve the well-being of native Missouri River fish populations. The Biometry Department at the *University of Nebraska - Lincoln* assisted with data and model development. Although many analyses were envisioned, time was available to evaluate hydrobiological relations with only larval fish and seine catch data as they related to releases from

the two dams.

Thirty-five larval fish models were created, but eleven of these were highlighted due to insufficient sample size in some instances.



View of the Missouri River near Niobrara, NE.

Smallmouth buffalo (*Ictiobus bubalus*), walleye (*Stizostedion vitreum*), sauger (*S. canadense*), and goldeye (*Hiodon alosoides*) abundance indices were found to be

correlated with discharge, suggesting that spawning success is related to flow. There were many significant correlation models among the seine data, including, shovelnose sturgeon (*Scaphirhynchus platorynchus*),

shortnose gar (*Lepisosteus platostomus*), goldeye, *Hybognathus spp.*, flathead chub (*Hybopsis gracilis*), sand shiner (*Notropis stramineus*) and walleye, when discharge was compared with current year cpue. In addition, shovelnose sturgeon, shortnose gar, common carp (*Cyprinus carpio*), *Hybognathus spp.*, flathead chub, emerald shiner (*N. atherinoides*), river shiner (*N. blennius*), bigmouth shiner (*N. dorsalis*), sand shiner, fathead minnow (*Pimephales promelas*), shorthead redhorse (*Moxostoma macrolepidotum*), black bullhead (*Ictalurus melas*), channel catfish (*I. punctatus*), white bass (*Morone chrysops*), bluegill (*Lepomis macrochirus*), and black crappie (*Pomoxis nigromaculatus*) models were correlated with discharge when

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discharge was compared with the previous year's cpue.

Discharge targets for Gavins Point Dam were developed using a model reported by Richter et. al. (1998, *Regulated Rivers: Research & Management* 14:329-340). These authors developed a series of hydrologic attributes with biological relevance and then characterized differences for these attributes between pre- and post-dam years on several rivers in North America.

The current Missouri River procedure used pre-dam Missouri River discharge for the period 1928-52 for the Sioux City, IA gage, compared with the post-dam period of 1954-98. This exercise identified the most critical hydrologic events based on the magnitude of alteration, pre- vs post-dam. Monthly mean discharge for January, March, April, May, July, and November were highlighted. Additional discharge is required during these months. In addition, short duration, 'flash floods' were determined to be the most altered including, 1, 3, and 7-day minima and maxima. It was recommended that hydrologic recovery programs be tested by using the annual operating plan followed by field monitoring to measure biological and human response.

In a 9/11/99 article in the *Omaha World Herald* entitled, *Flexibility is Vital for River*, Larry Hesse, President of *Rivers Corporation*, said "the Corps' manual should not set inflexible rules that damage people and natural resources." Hesse said his 40-year database can be used for developing an experimental water release plan and help find a way for fish and wildlife to coexist with industry and agribusiness. "Adopting a permanent operating alternative now for the Corps' manual would doom the river to further deterioration", Hesse said. "Money would be spent on habitat development projects, while the key ingredient that can make the habitat projects work – water releases – could not be changed. The result would be more native species at risk. Additional species would be listed as threatened and endangered. Recreational and commercial fishing would further deteriorate. An environmental and economic opportunity would be lost for more years to come. And, eventually, more money would have to be spent to update the Corps' manual yet again."

The Corps of Engineers has been trying to revise its *Master Water Control Manual* since 1988. The manual establishes the

"rules" for long-term water releases, and then an *Operating Plan* is developed each year as predictions of the Rocky Mountain snowpack and other runoff information become available. The *Plan* depends to a great extent on the rules set out in the *Master Water Control Manual*.

Review of the manual began 11 years ago after a lengthy Basinwide drought resulted in conflicting demands between downstream navigational and upstream recreational interests for a dwindling amount of water. About this same time, biological evidence suggested that water-release patterns from upstream dams may play a role in the health and well-being of the native fish and wildlife trying to survive in a dramatically altered river. The review process required technical expertise to evaluate a number of proposed water-release plans, and the process has been embroiled in controversy

ever since between upstream and downstream (mostly MO) states.

The first revised draft was completed in 1994, but was scrapped because of significant opposition. It involved a small increase in water releases from the dams in the Spring to enhance fish spawning. The current navigation plan tries to eliminate high- and low-flow periods, with minimal variation from April through November. Before the dams were built, water elevations rose and fell rapidly and frequently during the early Spring through late Summer period. These were actually small flash floods resulting from heavy localized rainfall. Of course the pre-dam Missouri River also was known for its large floods when the river was out of its banks for weeks at a time -- about once every 1.5 years. The dams cut that to once every 15 - 20 years, and even these were much smaller

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floods. "That has been good for people living and working on the floodplain, but it has been hard on fish and wildlife", Hesse said.

An 8/30/99 report in *The World-Herald* indicated that the *Missouri River Basin Association* (MRBA) agreed on a proposed river operating plan to be recommended to the Corps. The MRBA has not been very supportive of the idea of releasing water from Gavins Point Dam for environmental management, favoring instead the needs of navigation and agricultural interests. *American Rivers*, a Washington, D.C.-based environmental group, on the other hand has recommended a split navigation season, with somewhat elevated releases in the Spring and late Fall, and reduced releases in late Summer and early Fall. The 1994 proposal and split navigation season plans are similar and, Hesse believes, totally inadequate to help river fish and wildlife survive and prosper. He says, "These plans provide too little water during the Spring and Summer breeding season, and they do not address the natural 'flash flood' behavior of the pre-dam river." "Individual native species used these short-duration flash floods to breed. It was the wide variability of extremes in water flow that contributed to the viability of a large number of fish and wildlife species."

Hesse says further that, "Habitat is an essential component, but habitat has minimal value if it is not under water at the proper time." International environmental research on large rivers with similar problems supports the requirement for correctly timed and suitably sized water releases from dams as the essential ingredient for native species preservation. Hesse says, "Some species of fish that nearly disappeared after the dams and the navigation channel were completed increased their numbers dramatically during the 1993-1997 flooding. A serious error will occur if proper water releases are not included in the future long- and short-term dam operation plans."

Hesse is convinced that "our current understanding of the river environment is limited and that long-term plans must be easily adjustable". He says that "The best approach to achieve a water-release plan that people and wildlife can live with is to implement a trial annual operating plan. Field sampling can then be used to evaluate this experimental water-release program. Field data can document its good and bad impacts on both fish and wildlife as well as

human endeavors."

Hesse has studied the Missouri River almost continuously for more than 25 years, first as a state biologist with the Nebraska Game and Parks Commission and now for a Nebraska nonprofit foundation.

Missouri's MO River Alternatives

The State of Missouri has been at odds with most of the other Missouri River Basin states for a number of years over flow related issues, and whether the Missouri River should be managed specifically for navigation or whether its flows should also be used to address fish and wildlife species' needs. One of our readers in an upper Basin state sent us a copy of an article entitled, *"Addressing Missouri's Domestic Conflict of Interests in the Missouri River: A Suggested Approach for Resolution"*. It was written by Craig A. Street for the *Missouri Environmental Law and Policy Review*. Vol. 5(3):117-142. The following excerpt might serve as a useful guide for Missouri and others in solving such resource conflicts:

...The period of review is ... a good time for state leaders to reevaluate the interests of their people and to consider whether they are advancing the most appropriate interest or interests on behalf of their citizens. To that end, Missouri should endeavor to inventory the interests of its people, weigh and compare the relative values of the interests, and determine which interests it should advocate in the interstate dispute. The state government and elected state and federal officials, as public servants and representatives of the people, have an obligation to act on behalf of the people of Missouri, and in so doing, to advocate and protect the best interests of the people. Thus, after identifying all of the state's interests and ascertaining their relative values, the state should urge the Corps to manage the river in such a manner as will promote a combination of Missouri's interest and produce maximum benefits to the people of Missouri.

Admittedly, the notion of maximizing benefits for all of Missouri's people with regard to the management and utilization of the Missouri River is theoretical and idealistic. It would require that Missouri's political leaders escape political, interest-group, budgetary, and other pressures in order to objectively weigh and balance the state's various interests in the Missouri River. However unlikely this may be,

seeking to maximize benefits for Missouri on the Missouri River is, nonetheless, a worthwhile goal. As a state, Missouri should be committed to advancing policies and interests that, if implemented, would secure the greatest possible benefits for all its people. If Missouri's elected officials are incapable of objectively assessing the benefits of the state's various interests in the Missouri River, then the state should employ independent means in order to do so. In fact, Missouri should consider taking a number of actions to better ascertain, assess, and advocate the interests of its people. Missouri should (1) conduct studies to determine the public's attitudes toward and opinions regarding the use and management of the Missouri River; (2) conduct studies to more accurately assess the values of Missouri's different interests, including any noneconomic values of the interests; (3) conduct studies to determine realistic opportunity costs associated with pursuing each interest; (4) strive for objectivity and avoid political pressures in identifying and assessing the different interests; (5) disregard history and tradition to the extent they interfere with objectivity; and (6) focus on the best interests of all of the state's people.

While this comment has focused on the activities of Missouri's state government and political leaders, it is important to realize that this issue is not solely the government's burden. Private parties, too, should take action. Persons with any interest in the Missouri River, whether navigation, wildlife, recreation, or otherwise, should seek to organize and participate in the intrastate debate, if not, the interstate debate. At minimum, such parties should offer their opinions to their elected officials. Such officials can respond to public sentiment only if they are aware of what public sentiment is. In addition, private parties should consider conducting the same types of studies proposed above. So long as the party's objectivity is preserved, the studies are no less valid. In the alternative, private parties could employ independent groups to conduct the studies.

Although realistic assessments of costs and benefits are not available, this author is persuaded by the success of other basin states that if Missouri and the federal government would dedicate as many resources to developing recreational opportunities, fish and wildlife habitat, and intangible benefits on the Missouri River as have been dedicated to developing and maintaining the navigation channel over the past several decades, the recreation wildlife,

and intangible benefits would far outweigh the navigation benefits Missouri has heretofore enjoyed. Subsequent to the development of the mainstem dam and reservoir system, the upper basin states gained an extremely profitable recreational resource in the Missouri River. Those states have tapped and profited from the Missouri River's recreational potential, and Missouri can learn a valuable lesson from them. While the Missouri River in Missouri lacks the recreational draw of reservoirs, it does possess appreciable recreational potential along its mainstem, and, if the river were properly developed and aggressively marketed and promoted, recreation along the river could yield substantial economic benefits. Iowa appears to demonstrate this concept, even on a shorter length of the Missouri River than runs through Missouri. It is important to stress that promotion of recreation, fish and wildlife, and intangible benefits does not, by itself, require exclusion of navigation from Missouri's plans for river management. Advocating that Missouri assert more-beneficial interests over less-beneficial interests, as discussed in this Comment, certainly does not necessitate that one interest be promoted to the exclusion of any other. Rather Missouri simply should seek to allocate resources to generate the maximum possible benefits to the people of this state."

Feeding the World Through the Mississippi River, A Flawed Idea

"The future of the Mississippi River lock and dam system is being debated in political circles after an initial report from the U.S. Army Corps of Engineers multi-year study indicates upgrading may not be justified until at least 2020. The report concluded that expanding the navigation did not make sense even without considering the environmental costs of lock reconstruction.

"U.S. grain exporting and commodity groups have reacted strongly to the Army Corps recommendation and are now lobbying Congress for a \$1.2 billion appropriation, the "Export Facilitation Act," that would initiate the lock expansion studied by the Army Corps. The project would eventually cost \$5 to \$6 billion. Congress and the public are told that U.S. grain exports will be critically needed in the next two decades to feed a hungry world and boost farmer income. Modernizing the lock and dam system will facilitate movement of grain for export out of the Midwest. But

will this lessen food hunger? Will moving more grain down the Mississippi give farmers more income? The questions of who will benefit and who will pay deserve careful consideration.

"About 17% of corn, 30% of soybeans and 43% of wheat produced in the U.S. this past year will be exported. Much of the corn and soybeans grown for both domestic and international markets is used for animal feed, while a large percentage of wheat grown for international markets is used for human consumption. Some developing countries must import food to improve their diets, but they do not have sufficient income to pay for the food. These countries receive only about 15% of the U.S. grain exports. And while the amount of U.S. exports of corn, soybeans and wheat has nearly doubled since 1970, the money has not been seen by American farmers. Grain prices are at record lows. Dr. Dick Levins of the *University of Minnesota* examined the farm income in two agricultural Minnesota counties. He found that in spite of dramatic increases in yields and farmer efficiency, the farm income was virtually unchanged in these counties over the past 25 years.

"What is the role of grain exports to the U.S. economy and can the increase in grain exports, assuming markets exist, be used to justify the costs to the taxpayer of enlarging the Mississippi River locks? Will an increased ability to move grain from the Midwest to the Gulf measurably benefit individual farmers, or will the primary financial gains be made by the marketers and processors, both foreign and domestic? And when the costs of the lock and dam system expansion are assessed, to what degree will the environmental effects on the river and on the Gulf of Mexico be considered?

"It seems to us that public awareness of this issue must be raised and the lock and dam project debated. U.S. agriculture and rural farming communities are in dire need of help. It will take vision and creative approaches to work ourselves back to a prosperous, environmentally friendly agriculture that favors the family farm. The Export Facilitation Act, largely a public subsidy to grain traders, lacks that vision. Increasing export of grains out of the Midwest is not going to be the answer."

Source: Dennis Keeney and Mark Muller, *Des Moines Register*, 7/7/99. Keeney is Director of the *Leopold Center for Sustainable Agriculture* at *Iowa State University*

and President of the *Iowa Environmental Council*. Muller is a Senior Associate at the *Institute for Agriculture and Trade Policy*, Minneapolis

Round Goby Invasion

Experts say recent findings of the round goby in Lake Ontario are "grounds for serious alarm." A similar alarm has been sounded for the Mississippi River Basin. The small fish, native to the Black and Caspian Seas, feeds on the offspring and eggs of native fish (i.e. smallmouth bass, walleye, perch, lake trout, etc.) while driving them out of habitat and spawning grounds. The invader is only about four inches long but it threatens to alter ecosystems and is attracting the sort of attention normally reserved for more dangerous ocean predators. "This animal has found a niche very much to its liking," said biologist Ron Dermott of Canada's Department of Fisheries and Oceans.

It turned up in 1990 in Lake St. Clair, evidently after arriving in the ballast water of an ocean-going vessel. "As we get into a more and more global economy and global trade, the pathways for these exotics to come into our waters, and have a significant effect, increases," said John Mills, regional director general of Environment Canada. He said the increasingly aggressive goby is beginning to displace other fish like perch, monopolize the food available to other forage fish, and deny others access to spawning grounds.

The goby's only known benefit is that it feeds heavily on zebra mussels, which clog water intake pipes, but not enough to eliminate that problem species. Goby predators include sturgeon, bass or pike, but it "will chase away a fish twice its size," biologist Dermott added. Strategies that Canada is employing to limit the proliferation of gobies include educating boaters on the proper inspections of boats. In addition, the Coast Guard and Transport Canada inspect commercial vessels to ensure they transfer bilge and ballast waters properly, displacing gobies before they enter the Great Lakes system. "...there are probably a few dozen nonnative species in the Great Lakes basin," said Environment Canada scientist Harvey Shears. "At some point, we've got to try and stop the invasion because we just can't predict how the system's going to respond." However, Mills said the problem is that eliminating a species after it has become established is

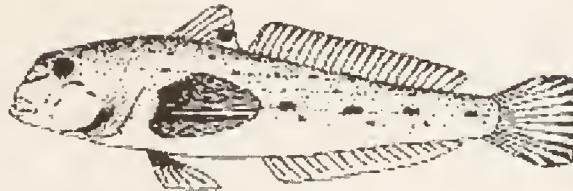
"usually impossible," but that it may be possible to slow their spread

Canadian officials, worry that the goby could injure the area's \$100 million fishing industry and, "are moving full speed ahead" to get control measures such as ballast-water exchange in place. But U.S. and Canadian officials disagree on the effectiveness of ballast-water exchange. The U.S. requires ships headed for the Great Lakes to dump stowaways in the North Atlantic. But some Canadians say because of rough conditions at sea, the U.S. requirement is "difficult if not impossible." The UN's *International Maritime Organization* hopes to have global regulations of ballast-water management in place by 2002 or 2003

Round gobies have become so abundant along the Illinois and Indiana lakefront in Lake Michigan that *Perch America*, a perch fishing organization, sponsored a "big-money" goby tourney to help get rid of the pesky critters. Eddie Landmichl, president of *Perch America*, said his group sponsored the tourney to help the U.S. Fish and Wildlife Service catch at least 1,500 live gobies for special toxicity tests. Prizes of \$100 to \$200 were awarded to anyone who brought in a suitably big goby. *Perch America* paid \$100 for a **10-incher**, while *Lakeside Bait & Tackle* in Hammond, Ind., coughed up \$150 for a **12-incher**. The best way to catch gobies is with a No. 8 Aberdeen hook tipped with maggots, redworm pieces or bee moth fished on the lake bottom against seawalls.

The point source for introduction of round gobies into the Mississippi River Basin is a man-made canal system (*Cal-Sag and Chicago Sanitary and Ship Canals*) that provides an aquatic connection between Lake Michigan and the Illinois River. This is the same pathway that the infamous zebra mussel used to invade the Basin. That

species, able to attach itself to barges by secreting "byssal threads", has now found its way to every reach of the Basin where commercial towboats travel (*see accompanying photo*). Zebra mussels are costing American citizens billions of dollars annually in control costs and lost revenues. In addition to barges, the mussel is able to attach itself to any solid object, and so clogs water intakes and literally covers outboard motors, boat docks, and native mussel species shells. It has become so abundant in some reaches that it is even depleting dissolved oxygen levels and killing native mussel species by sealing their shells shut, raising concern that it will lead to the extinction of some species.



"Round goby"

The round goby has already followed the path of the zebra mussel, finding it's way out of Lake Michigan and into the Cal Sag and Sanitary and Ship Canals. MICRA Chairman, Bill Reeves (TN) raised concerns about the round goby invasion in an 8/25/99 letter to the *Aquatic Nuisance Species Task Force* (ANSTF). The ANSTF, charged with addressing issues related to invasion of exotic species, is cochaired by the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration. Reeves called the canals "...a significant point source for the spread of exotic species from the Great Lakes to the Mississippi River Basin". Reeves also said that unless action is taken to control this problem, the round goby is expected to significantly impact fish species such as smallmouth bass, perch, walleye, and lake trout, all of which support significant local and regional fisheries throughout the Basin.

The Corps of Engineers plans to install an electric fish barrier in the canals next Spring in hopes of corralling the goby in the canals, but the efficacy of this measure is not known. Gobies have already been found at the confluence of the Cal-Sag and Sanitary and Ship Canals, about 7 mi. upstream of the proposed electric barrier site. This is a movement of about 15 mi. from last year's most downstream point of

known occurrence. MICRA's *Aquatic Nuisance Species Committee* Chairman, Jay Rendall (MN) said that at the present rate of spread, the gobies will likely move past the electric barrier location before it becomes operational.

As a consequence, an interagency panel has been considering this problem and has evaluated the use of the following additional control measures:

- Canvas electric barrier - This would take 60 to 90 days to install and may not hold up under barge traffic;
- Hydraulic barrier - This has not been field tested and would require significant effort including recessed piping in the walls and bottom of the canal to avoid barge damage;
- Oxygen reduction - This option could be used as a supplemental tool to prevent goby spread, but was not considered as a primary tool for the following reasons: (1) turning off the aeration station at the confluence may not kill the gobies and may push those at the confluence further downstream; (2) and the Metropolitan Water Reclamation District of Greater

Chicago (MWRDGC) is very sensitive to actions that may cause them to violate the water quality provisions of their existing permits from the state and the USEPA; and

- Piscicide application - The following factors favor this approach: (1) gobies do not avoid two piscicides (i.e. antimycin or baylicide); (2) the pH of 7 for the canal water is good for the suggested piscicides; and (3) a bottom formulation could be used to keep the piscicide in the target area of the waterways.

The consensus of panel members was that piscicide application was the only possible solution that could be implemented in a timely manner with a likelihood of success. MICRA supported this decision but added the following recommendations:

- Treat an area of the Illinois waterways from approximately 1/2 mile downstream of the confluence of the canals upstream in each canal to a point about 1/2 mile beyond the confluence (estimated cost \$60-80,000) as soon as possible (i.e. **before September 15**);
- After the treatment, temporarily stop aerating the water at the confluence of the canals until the proposed electric barrier is in place;
- Retreat as necessary until the electric barrier is installed;



Zebra mussels attached (below the waterline) to an "unloaded" barge.

- Continue monitoring to determine goby distribution in the waterways; and
- Evaluate the feasibility of amending the MWRDGC permit to require that the aeration devices in the Cal-Sag and Sanitary and Ship Canals be periodically turned off for a time long enough for the waters to go anoxic and kill any species present. Although this would also kill any native species which entered the canals, it would help to stop the spread of the invaders.

MICRA felt that a multifaceted approach of using both of these techniques and the electric barrier is needed because the electric barrier alone will likely not be 100% efficient. MICRA further recommend that the USEPA conduct a feasibility study as soon as possible and amend the MWRDGC permit, as appropriate. Reeves stated that the "importance of the native fish and the sport fisheries of the entire Mississippi River Basin far outweigh that which may be provided by the artificial canals."

MICRA's 9/15/99 recommended piscicide treatment deadline was not met due to regulatory constraints, and as far as we know Illinois (who has to push the regulatory process) has not expedited it, so a piscicide treatment will likely not be completed before the water cools to 60 °F, the point at which efficacy of the selected chemical drops off significantly. Also, the USEPA and MWRDGC both oppose shutting off the canal aeration devices as a supplemental measure to kill the gobies by letting the water go anoxic.

Another control method, not mentioned in MICRA's letter, but being discussed in some circles, is to stock the canals with large numbers of native predatory fish such as flathead catfish to prey on the gobies. This technique has reportedly been used with some success to control bullheads in Illinois power plant lakes, and may show promise in the canals. This technique would likely, however, require an ongoing stocking commitment, since the canals are not closed systems and some flatheads would likely escape through the locks.

As noted earlier, round gobies arrived in North America about 9 yrs. ago, likely in the ballast water of foreign freighters. The global economy and global trade have thus become troubling pathways for exotic species introductions, making this a federal issue. The burden of responding to this "biological pollution" should therefore not fall with the MICRA states or the sport

fishing public, but should be primarily a federal responsibility with funding for prevention and control measures coming, in some way, from the entities primarily benefitting from the presence of the "point source of pollution" (i.e. Cal-Sag and Sanitary and Ship Canals). The benefitting entities in this case are primarily the maritime industry (a small number barge and towing companies), and to a lesser extent, the MWRDGC.

The bottom line is that this is yet another impact of commercial navigation. These canals are reportedly maintained for the use of only a small number of towboats and barges. An even smaller number of recreational craft use them. Lake Michigan water used by the City of Chicago for domestic and industrial purposes, for the most part, is pumped through the city's water treatment system where, for all intents and purposes, all biological life is destroyed before it is released into the canals and from there downstream into the Illinois River and the Mississippi River Basin.

An evaluation (environmental and economic) is needed to determine the cost effectiveness of maintaining the aquatic connection these canals provide between the Great Lakes and the Mississippi River Basin. Closing this "point source of biological pollution" is not just a situation of stopping the spread of the round goby, and wishing we had stopped the zebra mussel before it. There are other species (e.g. river ruffe, various species of crustaceans, and other as yet to be identified species, including one that is said to cause cancer in fish) waiting in line to enter the Mississippi River Basin via these canals. The federal government is attempting to address the ballast water issue, but in the meantime the towing industry is getting another "free ride" while precious state and federal fisheries monies and resources are being "wasted" on the control of the aquatic invaders being allowed to enter the Mississippi River Basin through these canals. Our best advice is to:

"Stop the Invaders Now, Close the Canals!"

Sources: *Environment Canada release*, 7/28/99; Scott Sunde, *Seattle Post-Intelligencer*, 7/29/99; Ruth Walker, *Christian Science Monitor*, 8/2/99; John Husar, *Chicago Tribune*, 9/1/99; National Journal's GREENWIRE, *The Environmental News Daily*, 7/29, 8/2/99

Bighead Carp Concerns

The bighead carp (*Hypophthalmichthys nobilis*), a large-bodied planktivore native to eastern China, was introduced into Arkansas in 1973 in an attempt to improve water quality in fish hatchery production ponds. A year later regulations were mandated to restrict stocking of the species into the State's public waters, and the control of accidental introductions was investigated. Similarly, in Kansas the importation and possession of bighead carp were prohibited in 1978. Despite these regulations, the species found its way upstream into the Mississippi and Missouri river systems, and is currently reported in 22 states (AL, AR, AZ, CA, CO, FL, IA, IL, IN, KS, KY, LA, MO, MS, NE, OH, OK, SD, TN, TX, UT, and WV).

The diet of hatchery-reared bighead carp, raised alone in aquaculture ponds, was documented to consist of up to 86% zooplankton, including cladocera and copepoda. It is thus likely that bighead carp are negatively impacting native planktivorous fish, such as bigmouth buffalo (*Ictiobus cyprinellus*) and paddlefish (*Polyodon spathula*). Paddlefish populations have been declining in major U.S. river systems since 1900 due to over exploitation, habitat alteration, and habitat destruction. And MICRA was formed by the Mississippi River Basin states in the late 1980's out of a shared concern over declining paddlefish populations.

Spawning habits of bighead carp are not documented in the U.S., but in Asian and European rivers spawning is triggered by rising Spring water levels, peaking in late May. Spawning typically occurs at the confluence of two rivers, behind sandbars, stonebeds, or islands, in habitats characterized by rapid current (> 0.8 m/s) and mixing of water. Bighead carp eggs are semi-buoyant and require a current to float. One day after fertilization, the eggs hatch and enter the ichthyoplankton drift. Six days later, the larval bighead carp migrate to shore, and flood plains associated with rising water levels thus provide nursery areas. Optimum water temperature for spawning is 22-26 °C, and must be greater than 18 °C. Bighead carp often have 2-3 spawning periods per year.

The species reaches sexual maturity at 3-9 years of age, depending on environmental conditions. Average weight and length of sexually mature individuals have been

documented at 50-70 cm and 5-10 kg, respectively. Males generally mature one year earlier, at smaller sizes than females. Fertility increases with increasing age and body weight, and is directly related to growth rate -- an 18.5 kg female is capable of producing over one million eggs.

Bighead carp populations seem to be on the rise in the Mississippi River, with the first reported catches (300 lbs.) occurring in Tennessee's commercial fishery data this year. Also reports of at least 3 year classes (up to 30 in. long) were documented this Summer by the Upper Mississippi River Long Term Resource Monitoring Program field station at Cape Girardeau, MO.

Concerns over continued expansion of bighead carp populations have prompted four MICRA states (IA, KS, MO, and SD) to begin developing a multi-state study of the species. The research, scheduled to begin in 2000, will likely be conducted by the respective Cooperative Fishery Research Units of the participating states. It will document population characteristics including: current distribution, food habits, recruitment, growth, mortality, rate of expansion, and range limitations in the lower Missouri River (i.e., Gavins Point Dam to the Mississippi River confluence.

Sources: Sally Schrank, *ANS Digest* 3(3):26-28; Robert Todd, *Tennessee Wildlife Resources Agency*, 9/8/99; and Bob Hrabik, *Missouri Dept. of Conservation*, 8/3/99

Caviar Controversy Continues

On 9/20/99 MICRA received an email message from Dr. Vadim Birstein, *American Museum of Natural History* in New York, transmitting a copy of a letter he had written to Dr. Robert Jenkins, Chairman of the *CITES Animals Committee* raising concerns regarding the way in which the U.S. Fish & Wildlife Service (USFWS) is handling "implementation of the CITES listing of sturgeons for the future actions under the CITES". In this letter Birstein accuses the USFWS of using "pseudoscience as a tool for legal international actions".

Specifically, he points to new facts released by the USFWS Division of Law Enforcement during a trial in Federal Court in New York (i.e. Civil Actions Nos. CV 98-7047 and 98-7232) which show that caviar species identification by the USFWS Forensics Laboratory (FL) using its "so-called 'molecular method' is not based

on scientific data". Birstein calls the method a theoretical invention of its author, Dr. Steven Fain, and points to the following scientific problems:

- The USFWS molecular method...is not based on experimental data because it did not use enough tissue samples of the target species to prove statistically that the method works. Also the method has never been peer reviewed by independent scientists or published in a professional journal. Despite all this, beginning on 4/1/98, the FL used its method for testing commercial shipments of caviar to the U.S. Since then, several tons of caviar were stopped, destroyed or rotten.
- Tissue samples presently available to the FL includes only a few scientifically valid samples (i.e. from fish identified by a sturgeon expert) from each of the three main commercial sturgeon species (i.e. the beluga *Huso huso*, sevruga, *Acipenser stellatus*, and Russian sturgeon, *A. gueldenstaedtii*). All valid FL samples represent only one population (Volga River) of each species. In the meantime, each of the three species consists of many populations living in three basins of the Caspian, Black, and Azov seas. According to statistics, the FL needs to have tissue samples from at least 10-20 sturgeons representing several populations of each species.
- The FL ignores the basic principles of scientific sampling:
 - In his tests Dr. Fain uses tissue samples from unknown fish of unknown location obtained at fish markets (without supervision of any sturgeon expert) as reference standards of beluga and Russian sturgeon;
 - Dr. Fain uses tissue samples from unknown fish from unknown location as references for the Siberian sturgeon, *A. baerii* (presumably *A. b. baicalensis*). These fish, seized by the Customs of Florida, were described (in a letter from Allan Brown, Florida Customs) as follows: "Warning: these fish STINK. Even though they were frozen immediately after they died, they smell terrible, even when frozen." These fish have never been identified by any expert on sturgeons. Despite this, the "stinking fish" of unknown origin and location are used by the FL as standards for its forensic identification.
- In his method, Dr. Fain is using a very short region of the mitochondrial cytochrome b gene (cyt b), which consists of only 270 nucleotides (or base pairs, bp). This region does not contain diagnostic nucleotides for all sturgeons species (5-7), as Dr. Fain claims.
- Dr. Fain does not use special computer programs for the analysis of the DNA sequences. Instead, he picks up by hand nucleotides from 28, as he believes, informative diagnostic sites from the original 270-bp sequence. Dr. Fain has never revealed any reason or scientific proof for choosing these 28 nucleotides. Dr. Fain has never presented experimental data that would show that the extraction of these 28 bp in fact can be used as a characteristic of a species.
- Taking into consideration that the FL's collection of tissue samples consists of only 10 scientifically valid samples of *A. gueldenstaedtii*, 9 samples of *A. stellatus*, and 8 samples of *H. huso* from only one population of each of the species, the FL CANNOT provide scientific proof that its method in fact is working.
- Because of the lack of samples, Birnstein says Dr. Fain falsified the data. The "identification" of the ship sturgeon, *A. nudiventris*, caviar is a good example. Birnstein says that during the preliminary court hearing on 12/5/98 Dr. Fain testified that for the identification of *A. nudiventris* he had used data from the GenBank (access No. AF006152), which Birnstein and his colleagues had developed. Regarding that data Birstein said, "We studied only one specimen of *A. nudiventris*. Potentially, we could have made a mistake or mistakes in the sequence." Birstein points out that this can happen in a routine scientific study, but it is not acceptable in forensic science. But to have a characteristic of a species (including a DNA sequence), one needs to study at least 10-20 individuals, and if a species consists of many populations, a researcher is obliged to study 10-20 individuals from each of the many populations. Birnstein says the lack of samples resulted in a manipulation of the data where "...caviar from unknown, unidentified sturgeon species from unknown location through Dr. Fain's manipulation becomes a tissue standard from a known identified species caught in a known location".
- The FL is using for testing only 1-2 eggs for a caviar sample. This is, again, statistically not enough for a serious conclusion. Birnstein points out that during the testing, a researcher can fail with one egg (as it was revealed during hearings, it happens in the practice of the FL) and it is clear that the

result of testing one egg cannot be conclusive (a lot of mistakes could be made during the many steps of testing). If a researcher expects that a sample of caviar can be a mixture of caviar from two species, he needs to test 8-10 eggs.

- Even if we are to believe that despite all above-mentioned problems the FL's "method" is working, the records of the FL show that it is extremely unreliable. From 5/12/98 till 3/2/99 the FL failed to identify 20% of caviar samples declared as *A. gueldenstaedtii* (23 of 115 analyses), 7% of samples declared as *A. stellatus* (7 of 98 analyses), and 20% of samples declared as *Huso huso* (20 of 103 analyses).

Birnstein concludes that "...testing samples from commercial caviar shipments by the FL must be stopped immediately in the USA and the FL's method must be reviewed by a group of independent (not employed by the USFWS) experts in molecular genetics and conservation biology". Birnstein further proposes that the *CITES Animals Committee* "introduce a rule to submit any unpublished method which potentially could be used for the CITES implementation for a review by experts from the *National Academy* of the country which offers the method, or by any other internationally recognized group of independent scientists".

Birnstein says that several tons of caviar have been seized and destroyed since 4/1/98 on the basis of results of the FL analyses. Unfortunately, these seizures have had "...NO impact on sturgeons in the Caspian Sea. But they are effectively destroying several small family businesses here, in the United States". When a caviar shipment arrives in JFK, the sturgeon females have already been killed, processed and caviar produced. The Russian partner has already been paid (Russian businessmen demand prepayment in their international export-import deals) even if he had cheated his American partner by putting the wrong name of sturgeon species in the paperwork, including the CITES permits. If the caviar shipment was stopped by the USFWS and goes rotten, only the American businessman is hurt. The Russian businessman continues to catch the fish without change because he has an option: to send his next caviar shipment to Europe, where no molecular testing is implemented by the CITES authorities and implementation consists of simply checking the documents. The intensity of the sturgeon catch in the Caspian, Black, and Azov seas is thus not

affected by the USFWS seizures.

Birnstein says, "I believe that the idea of the CITES implementation was to save sturgeons in the wild...In the worst nightmare I could not imagine that our efforts would become a Kafka-Orwellian process of caviar testing in the United States using a scientifically inadequate method, a process that has nothing to do with saving sturgeons from extermination".

Birnstein says the second consequence of the sturgeon CITES listing is that international projects and research have become almost impossible. The CITES listing made an exemption for 250 gms. of caviar which can be brought into a country by anybody without special permission. But CITES did not provide any exemption for scientific samples so that now a scientist cannot send even one egg fixed in alcohol to a colleague in another country for a genetic study. This means the end of working relationships between scores of scientists located in different countries because of bureaucratic reasons. Birnstein says, This "...is absolutely destructive to the long term survival of sturgeons." Birnstein thinks it is time for the CITES to make an exemption for tissue samples for DNA studies. These samples have nothing to do with the trade and convention. The current regulations disrupt international scientific contacts and the development of scientific knowledge necessary for conservation work worldwide.

For additional information contact: Dr. Vadim Birnstein, *The Sturgeon Society*, 331 West 57th Street, Suite 159, New York, NY 10019, birstein@pipeline.com

Janet Reno's Huck Finn Project

Federal prosecutor Charles Grace describes the Mississippi River as "...probably one of the top two or three great resources this country has physically...But we have used this resource in modern times in a way that has degraded it." It is now often unsafe to swim in or eat fish from much of the world's third-longest waterway, and the habitats that the river basin provides for birds and animals from the Allegheny Mountains in the east to the Black Hills in the west are fast disappearing. Environmentalists also believe pollution from the Mississippi River has caused a 7,000 mi² dead zone in the Gulf of Mexico (See *Dead Zone Grows*). Such concerns prompted Grace - who oversees federal cases in Illinois' 38

southernmost counties - to work to reverse the tide of pollution. To do so, he pulled together people from many levels of government: the USEPA, state environmental agencies, the Fish and Wildlife Service, the Coast Guard and other U.S. attorneys; and over the past two years has gone after polluters throughout the Mississippi River Initiative - or Attorney General Janet Reno's "Huck Finn" Project, as it is affectionately known - has produced dozens of criminal convictions and millions of dollars in civil penalties and restitution.

Polluters have been caught dumping raw sewage and industrial waste into the river and its tributaries, destroying nearby wetlands, even emitting toxic chemicals into the air that could turn into acid rain and harm the water. The accused include: an oil refinery in Chicago's south suburbs; another in Roxanna, IL; the city-owned wastewater treatment plant in Youngstown, OH; a concrete company in CO; a truck driver in LA; a hog farm in IA; and a riverboat casino in St. Louis, MO.

But dedicated Mississippi River watchers - including those responsible for the program - also recognize their limited ability to make a huge dent in how dirty the river system is. The most significant source of the water's ills is runoff from farms, construction and residential areas. That type of pollution is not regulated by the Clean Water Act. And since the agencies involved - which already are financially strained - get virtually no new money, they cannot handle many of the complex, science-heavy cases. Instead, they've picked the most egregious examples and hoped the ensuing publicity makes potential polluters think twice.

In the intensified effort's first year, 142 cases were filed, resulting in \$28.9 million in penalties and restitution. By 9/98, there were 54 criminal convictions, as well as 18 civil actions and 93 administrative cases brought by the USEPA. Since then, there have been 14 new civil actions, bringing in another \$52.9 million in fines and commitments to clean up their messes, purchase wetlands, stabilize stream banks and perform other environmental restoration, as well as 120 new administrative cases. The Justice Department could not give a total number of the additional criminal cases, but they include:

- Indictments against *Chemtco Inc.*'s Hartford, IL, copper smelting plant and five

of its employees for allegedly installing a secret pipe a decade ago that has spewed metal-laden sludge into Long Lake, a creek that empties into the Mississippi. A sixth employee pleaded guilty and is cooperating with Grace's office.

- \$19 million in fines and restitution assessed in 12/98 against *Burlington Northern and Santa Fe Railway Co.*, for dumping thousands of tons of lead waste at a rail car cleaning operation in Cherryville, MO.

- A pending settlement with *Material Service Corp.* that would require the company to pay \$7.5 million in penalties and to buy wetlands for letting its dolomite mining operation destroy about 40 acres of wetlands near the Des Plaines River outside Chicago (See *Miscellaneous River Issues*).

"It's not just a cost of doing business, where you pay a fine," said U.S. Attorney Ed Dowd, who oversees Missouri's eastern district. "We're putting people in prison." Even environmentalists, accustomed to criticizing the government's performance as a steward of natural resources, cheer the program. Reno and Assistant Attorney General for Environment and Natural Resources Lois Schiffer have "pursued this like Elliot Ness pursued Al Capone. These are two tough ladies," said Scott Faber of the Washington-based conservation group *American Rivers*. "I think it's terrific that people who dump tires or oil into the Mississippi River are going to jail."

Source: Jennifer Loven, *Associated Press Newswires*, 8/2/99

Ag Waste Update

Drawing criticism from both farmers and environmentalists, the USEPA has announced new restrictions on two widely-used pesticides. The agency will restrict the use of both *azinphos methyl* and *methyl parathion* beginning with next Spring's growing season. *Azinphos methyl* use must be reduced and *methyl parathion* will no longer be allowed for produce applications, but much of the *methyl parathion* use is not affected by the new rules. Last year, 4.2 million pounds of the pesticide were applied to 4.9 million acres, but about 75% of the acreage produced

cotton, corn and wheat, which do not fall under the new restrictions. USEPA Administrator Carol Browner said children's health concerns prompted the move. The action is the agency's first "major step" under the 1996 Food Quality Protection Act, which gives EPA the power to review 10,000 pesticide uses. Although manufacturers agreed to the limits, farmers are concerned that no affordable replacement exists and that the EPA move will create unfounded fears about food. Meanwhile, the *Natural Resources Defense Council* and several environmental groups announced that they will sue the EPA for not moving quickly enough, because they failed to meet deadlines set by Congress in 1996.

Meanwhile, according to a *University of California - Los Angeles* (UCLA) study published in the 8/20/99 issue of the journal *Science*, Midwest topsoil erosion has declined since the 1930s. The study attributed the trend to improved farming practices and soil conservation efforts. Led by UCLA's Stanley W. Trimble, the researchers examined the Coon Creek Basin in western Wisconsin and found "a real success story in the soil conservation field." Trimble said, "When people say soil erosion is as bad now as it was in the 1930s, it indicates they are absolutely clueless about what was happening in the '30s." Trimble said many agriculturally disturbed basins in the eastern U.S. are likely to show similar progress but on differing magnitudes. The research confirms other surveys, and the Agriculture Dept.'s National Resources Inventory has indicated a general decline in soil erosion in recent years.

New controls in Maryland, Virginia and Delaware have shifted some of the burden of poultry waste control to the big parent poultry companies. Currently, local farmers who grow chickens for the large companies "are left to deal with the several hundred chickens that usually die before maturity as well as the manure all the birds generate." But MD, VA, and DE lawmakers, regulators and environmentalists wanted the sponsoring companies to take responsibility for the

waste since they actually own the birds. A national strategy to reduce farm pollution released by federal regulators in March urged states "to pin legal liability" for manure disposal on poultry companies. But chicken companies say they can't afford the extra financial responsibility, and argue that manure is a valued commodity that contract growers use to fertilize their fields.

According to a report released in mid-September by the *Sierra Club* factory-style hog and chicken farms receive millions of tax dollars to pollute air and water. The report, which examines public subsidies received by 10 large livestock operations, found the farms have benefited from tax dollars for road improvements, railroad spurs, worker training and wastewater treatment plants. At the same time, livestock waste is contaminating water supplies. The companies profiled in the report are Kentucky-based *Cagle's Inc.*; Illinois-based *Murphy Family Farms*; Mississippi-based *Prestage Farms*; Arkansas-based *Tyson Foods, Inc.*; Utah-based *Circle Four Farms*; Maryland-based *Perdue Farms*; Oklahoma-based *Seaboard Corp.*; Iowa-based *DeCoster Farms*; Missouri-based *Premium Standard Farms*; and North Carolina-based *Smithfield Foods*.

In *Arkansas* *Tyson Foods Inc.* violated state regulations more than any other hog producer, according to a report released by the *Arkansas Public Policy Panel* and *Arkansans for Responsible Agriculture*. The groups said Tyson violated its AR Dept. of Environmental Quality permits 135 times between 2/96 and 6/99. A Tyson press release called the report "absolutely false".

In *Georgia* the Board of Natural Resources adopted a budget request on 8/25 that would add 60 people to the state's Environmental Protection Division (EDP). The increased staff would, in part, help the EDP enforce new hog farm regulations, and crack down on stormwater runoff.

In *Iowa* many older, earthen hog-waste lagoons are "oozing" chemicals and failing state environmental standards, according to an investigation by *Iowa State University*. The research, released on 8/23, found that the lagoons generally contain as much manure as they were designed to hold when they were built 5-12 yrs. ago. But more than a third of the 34 lagoons studied have leaked too much to meet "tough" state standards that



took effect this year. The investigation showed that pollutants seeped from the lagoons into surrounding areas, but not to the degree researchers predicted. Lead researcher Stewart Melvin said, "Our data indicate that most structures are meeting the standards to which they were built. We find that encouraging." But because those standards have changed, researchers called for better management of the lagoons. The *Iowa Farm Bureau* said the report shows "the lagoons did the job they were supposed to do," while the *Iowa Environmental Council* said the study is "evidence that waterways are threatened by hog-manure pollution", and called for regular testing at each site

In Kansas the Dept. of Health and Environment will require hog farms with more than 10,000 animals to line waste pits with plastic to keep manure out of groundwater supplies, according to the state's top environmental officer, Clyde Graeber. Water supply managers welcomed the move, but said the action "does not go far enough." Mike Dealy of the *Groundwater Management Dist. 2* in Halstead, said large hog farms are rarely located near heavily populated areas and that the biggest risk to aquifers are medium-sized farms that are not being required to line their pits. But pork producers say the action "goes much too far." Mike Jensen of the *Kansas Pork Producers Council* criticized Graeber for an "ongoing vendetta against the swine industry." The debate over KS hog lagoons has heightened because *Seaboard Farms*, one of the country's largest swine producers, has announced plans to build a packaging plant near Great Bend that would process 4 million hogs/yr., twice the number currently raised in the state.

In Kentucky "an opening shot in what could be a major environmental battle of the 2000 General Assembly," KY *Sierra Club* leaders called on Gov. Paul Patton (D) on 9/15 to impose a moratorium on chicken houses until the Legislature passes regulations to prevent massive amounts of manure from contaminating water.

In Maine four state agencies recently signed an agreement to implement the Nutrient Management Revolving Loan Program, which will provide as much as \$6 million to ME farmers to improve handling of manure and milk-room wastes

In Massachusetts the USEPA on 7/30 made a farm the first in New England to be regulated as if it were a factory or sewage

treatment plant subject to "massive" fines or closure. The National Pollution Discharge Elimination System permit is normally required for manufacturers and wastewater treatment plants and sometimes large Midwestern dairy farms. Under the permit, Jose Pimental's 450-cow, 30-acre farm near the Westport River could be fined or shut down if he disobeys instructions on how to stop the pollution. Manure from Pimental's farm flows into the river and a nearby creek, driving bacteria levels up to 8,000 times the safe level. The new permit is a warning to other New England farmers that if their farms pollute waterways, "they, too, may face the heavy hand of federal manure regulation".

In Missouri an "unprecedented" deal has been struck with MO hog producer *Premium Standard Farms* who has agreed to pay a \$1 million fine and invest \$25 million in new technology to reduce its pollution. MO Attorney General Jay Nixon filed a lawsuit in January accusing the state's largest hog producer of numerous manure spills and other violations of anti-pollution laws. The fine is the largest ever levied against a U.S. livestock farm.

In New York the largest *E. coli* outbreak in state history may have been caused by farm runoff, officials say. One girl has died, and more than 150 people ingested the bacteria after attending the Washington County Fair in Greenwich, in late August. Officials say the bacteria may have found its way into the fair's water supply after a "major downpour" on 8/26. Runoff was washed from a nearby barn into the aquifer the fair used for its water. And because the water table was lower due to the drought, the well was unable to reach the purest water. Officials have not been able to find a pattern among those who became ill, but the water could have been used to make ice, wash lettuce and prepare food.

In North Carolina hurricane Floyd's heavy rains ruptured a hog waste lagoon in Duplin County, spilling about 2 million gallons. The spill threatened to pollute a tributary of the Cape Fear River, which supplies Wilmington's drinking water. Ernie Seneca of the state water quality division said officials would be monitoring other hog waste lagoons.

In Ohio Gov. Bob Taft (R) announced on 7/20 a new program to encourage farmers to use strips of land near streams as buffer zones to block pollutants from reaching the waterways. Meanwhile, three residents of

Licking County, are suing the *Buckeye Egg* farm for \$11.5 million, saying chicken manure and fertilizer spilled into creeks that pass through their properties.

In Oklahoma on 8/10, the Water Resources Board denied the state's largest hog producer, *Seaboard Farms*, a water permit for a huge facility in Beaver County. *Seaboard* said it has already spent \$10 million on the facility after being granted construction permits by the state Agriculture Dept. and has taken the 25,000 hog farm issue to court. The board said state law forbids locating hog farms within three miles of a nonprofit facility that conducts recreational activities. The proposed farm is three miles from the 22-member *Bethel Church of God* in Beaver County.

In Oregon a U.S. district judge ruled on 7/29 that a Yakima Valley dairy farmer is liable for 15 violations of the Clean Water Act for polluting water with cow manure. Henry Bosma could face fines of more than \$350,000. Judge Edward Shea also ruled that irrigation canals can be classified as federal waterways protected by the Clean Water Act.

In Virginia the *VA Poultry Federation* is setting up a toll-free hotline that will help connect poultry growers who have surplus litter with those who need it for cattle feed or crop fertilizer. The *Chesapeake Bay Foundation*, which lobbied for the provision, hopes it will help control poultry pollution and decrease the amount of nutrients in state waterways. Meanwhile, a federal appeals court upheld a lower court ruling in mid September that requires pork processor *Smithfield Foods Inc.* to pay \$12.6 million – the largest fine ever imposed under the Clean Water Act – for polluting the Pagan River earlier this decade. Justice Department lawyers accused *Smithfield Foods* of "willfully polluting" the river from 1991-97 to avoid expensive improvements to wastewater treatment plants at its two riverside slaughterhouses. *Smithfield Foods* claimed an agreement with the VA Department of Environmental Quality allowed the company to exceed phosphorous discharge limits with an agreement to connect its plants to the *Hampton Roads Sanitary District System*. But the three-judge panel said the agreement did not apply to the federal government. The state of VA has filed a separate lawsuit against *Smithfield Foods* for "slipshod management" that caused other pollution, and record-keeping violations.

Meanwhile, producers say environmental rules are being used "to keep out an emerging industry that does not fit with the rural tradition of the family farm", a debate often driven by emotion and nostalgia.

Mark Drabenstott, VP at the *Federal Reserve Bank* in Kansas City, and an expert on the rural economy, says "the industry is going to go where it feels welcome." He notes that big producers have started raising some pigs in the western provinces of Canada and are considering doing the same in Mexico.

Sources: Tom Kenworthy, *Washington Post*, 8/3/99; Lisa Ramirez, *Philadelphia Inquirer*, 8/3/99; Matthew L. Wald, *New York Times*, 8/3/99; *Wall Street Journal*, 8/3 and 8/20/99; *AP/Richmond Times-Dispatch*, 8/20/99; Peter S. Goodman, *Washington Post*, 8/3/99; *Sierra Club* release, 9/15/99; Barbara Wieland, *Little Rock Arkansas Democrat-Gazette*, 7/21/99; Dave Williams, *Augusta Chronicle*, 8/26/99; Perry Beeman, *Des Moines Register*, 8/24/99; Jean Hays, *Wichita Eagle*, 8/3/99; Andy Mead, *Lexington Herald-Leader*, 9/16/99; *Portland [ME] Press Herald*, 8/24/99; Scott Allen, *Boston Globe*, 8/1/99; Michael Mansur, *Kansas City Star*, 7/29/99; Amy Waldman, *New York Times*, 9/7/99; Sylvia Wood, *Albany Times Union*, 9/7/99; Manware/Perlmutter, *Charlotte Observer*, 9/17/99; John Seewer, *AP/Cleveland Plain Dealer*, 7/20/99; *Columbus Dispatch*, 8/7/99; Mick Hinton, *Oklahoma City Daily Oklahoman*, 8/11 and 9/14/99; Mark Jewell, *AP/Portland Oregonian*, 7/30/99; Calvin R. Trice, *Richmond Times-Dispatch*, 8/2/99; Alan Cooper, *Richmond Times-Dispatch*, 9/15/99; and National Journal's *GREENWIRE*, *The Environmental News Daily*, 1/21; 3/9; 3/19, 7/22; 8/2, 8/3, 8/4, 8/10, 8/12, 8/16, 8/20, 8/25, 8/26, 9/7, 9/14, 9/15, 9/16 and 9/17/99

Dead Zone Grows

The largest ever low oxygen zone off the coast of Louisiana was recently mapped by a team of *Louisiana Universities Marine Consortium* (LUMCON) research scientists. A preliminary estimate of the bottom area made by Dr. Nancy Rabalais puts the size at 20,000 km² (7,728 mi²). This is about 2000 km² (700 mi²) larger than the previously recorded maximum size in 1995. The expanse is about the size of the state of New Jersey, and if placed in the heart of the country would extend from Chicago, IL to Des Moines, IA.

The low oxygen zone, commonly referred to

as the "dead zone", or region of "hypoxia" in scientific terms, stretched west from the Mississippi River delta all the way to the Texas border, and from very near shore along most of the Louisiana coast out to 10 ft. water depths. Off Grand Isle, LA, the low oxygen extended from shore to 24 km (15 miles) offshore, off Isle Dernieres to 56 km (35 miles), off Atchafalaya Bay 72 km (45 miles) and off Cameron, LA reached 88 km (55 mi.) offshore. The popularized name of the "dead zone" derives from the lack of sea life such as shrimp, crabs and fish in its bottom waters. When the oxygen levels in the bottom waters fall below 2 milligrams per liter (ppm), anything that can swim leaves the area. Animals that cannot escape, such as the clams, snails, and worms that live in the mud, eventually die if the oxygen levels are too low for too long.

Evidence of Mississippi and Atchafalaya River waters was apparent during the LUMCON mapping cruise in the form of much lower salinity surface waters and dense concentrations of phytoplankton (microscopic algae or plants). Low oxygen waters usually form each Spring and Summer as a result of discharge from the Mississippi River system. The fresh waters bring with them nutrients and overlie the heavier, saltier Gulf waters forming a two-layer system. The phytoplankton flourish in the nutrient-enriched surface waters. Eventually they die and sink to the bottom, or are consumed by zooplankton and the zooplankton fecal pellets sink to the bottom. The organic matter that falls into the lower waters and reaches the seabed is decomposed by bacteria, a

process that uses up the oxygen in the lower water column. Low winds and calm seas occur more commonly in the Summer, providing the perfect conditions for persistence of the two-layer system and development of expansive zones of hypoxia off the coast. Low oxygen levels persist for much of the Spring and Summer only to be relieved when a tropical storm or cold front pushes across the Gulf and stirs up the water column.

A 2 yr. study conducted by the White House Office of Science and Technology Policy

blamed fertilizer runoff from Midwestern farms for causing the "dead zone". The study concluded that the dead zone could shrink if farmers cut fertilizer use by 20% and restored 5 million acres of wetlands that could trap nutrients before they reach the waterways. The study attributed more than 50% of nitrogen in the water to runoff of crop fertilizers, with the rest originating from rainfall, sewage plants, manure, decaying plants and other sources.

But the *American Farm Bureau Federation* calls the data "questionable" and insists more research and voluntary reduction programs should preclude restrictions on fertilizer. Emily Eide of the *Iowa Farm Bureau* said, "There is no cause-and-effect relationship demonstrated by the assessment, or any other known science, between a 20% mandated cut ... and any improvement in the short run in water quality."

Although the dead zone may be caused in part by agricultural runoff from the Upper Midwest, developers in the lower Basin must also accept some of the blame. The lower Mississippi River has been almost completely isolated from its "life giving"

coastal marshes by a system of flood control levees and a deepwater ship canal. As such the ship canal acts like a huge hypodermic needle, injecting runoff materials from the watershed directly into the deeper waters of the Gulf, bypassing the River's shallow, life-giving coastal marshes.



In a natural river system coastal marshes and estuaries act like "kidneys" for the river and coastal ecosystem, stabilizing and oxygenating materials carried in from the watershed. Not only are the

coastal marshes and estuaries not performing their "cleansing" functions, they are also being lost to erosion from the Gulf, a natural process that is counterbalanced in a natural ecosystem by sedimentation carried in by the river from watershed erosion.

The bottom line is that to solve the Gulf hypoxia problem, both contributing problems must be addressed. Runoff of nutrients from agricultural and industrial wastes from the watershed must be reduced, and flow and sediment transport must be restored to the coastal marshes.

We have found the culprit, "It is all of us!" The question is are we willing to do anything about it?

Sources: *Mississippi Monitor*, Vol. 3, No. 9; Philip Brasher, *AP/San Francisco Chronicle/Examiner online*, 8/17/99; Perry Beeman, *Des Moines Register*, 8/16/99; National Journal's GREENWIRE, *The Environmental News Daily*, 8/4, 8/17/99

Dam Update

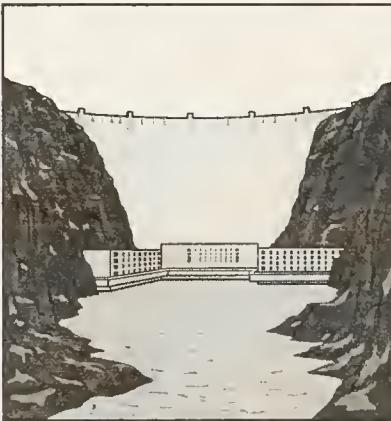
The Tennessee Valley Authority has begun dismantling the \$83 million, "unfinished" Columbia Dam along the Duck River. The dam site was located 40 miles south of Nashville. Construction began in 1969 and continued until 1983 when it was halted for environmental reasons. TVA is recommending the 12,800 acre project be used as a recreation and wildlife management area.

Licenses of 80 hydroelectric dams in the southeastern United States will expire in the next 10 years, forcing utilities to "justify scores of dams in the new era of government mandated environmental awareness." The Federal Energy Regulatory Commission's (FERC) new relicensing method is a 7 mo. process as opposed to the old 3-5 yr. timeframe. One of the largest licenses in the nation is a 4-project conglomerate owned by *Alabama Power Co.*, which must renew its licenses by 2007.

In California, a bid by *Pacific Gas and Electric Co.* (PG&E) to transfer its network of dams and power plants to an unregulated subsidiary for \$3.3 billion has won support of some prominent energy and water groups. For months, PG&E has participated in hearings with the California Legislature over plans to shift control of its 68 powerhouses, 99 reservoirs, 174 dams, 19 miles of pipe and 136,000 acres of eastern California land to Maryland-based *U.S. Generating Co.*, where they would be exempted from California regulations. It revealed its list of supporters to the public at an *Assembly Utilities Committee* hearing on 8/16/99. Johanna Thomas of the *Environmental Defense Fund* said PG&E is also in the midst of "roller-coaster" talks with environmental groups over changes in how the dams should operate. PG&E Vice President Dan Richard said his company is negotiating with the groups to spend \$200 million to improve river quality and protect 45,000 acres of watershed. But Thomas expects costs to hover around \$400 million. Several lawmakers may require the utility to make

the environmental improvements before they concede on the dam transfers.

Also in California, the Department of Agriculture's General Counsel has joined the Interior and Commerce departments in recommending that the FERC close a hydroelectric dam on the Eel River in the northern part of the state to save endangered salmon and steelhead trout runs. The *Pacific Gas and Electric* dam, known as the Potter Valley Project, diverts 85% of Eel River flows into the East Fork of the Russian River. Water diversions are factors "believed to have contributed to the crash" of depleted salmon runs. But the *Sonoma County Water Agency*, which draws water for agricultural and residential use, has "threatened to sue if water is returned to the Eel".



Oregon officials "are about to dive headfirst into an unprecedented flood of hydroelectric renewals" that range in size from Boise-based *Idaho Power Co.*'s three dams along the Idaho-Oregon border, which generate 1 million KW, to a 6-inch plastic pipe, which siphons water to power a home. To balance environmental and energy needs, state wildlife, energy and environment officials have formed a *Hydroelectric Application Review Group* to look at each renewal. Most projects will be reauthorized, state officials said. But nearly all pose barriers to threatened or endangered fish and some will be removed.

Also in Oregon, Portland-based *PacifiCorp* agreed to a deal on 9/23 among environmentalists, private industry and the federal government to demolish the Condit Dam on Washington's White Salmon River, starting in 2006. The Condit's removal will make way for about 5,000 to 10,000 fish to spawn in the river, including bull trout, the coastal cutthroat trout and the Pacific lamprey. The 125 ft. high dam, which has blocked salmon and trout from their historic breeding

grounds, produces 15 MW of electricity. *PacifiCorp* agreed to contribute \$17 million for its removal and for projects to improve the fishery. In return, the utility will be allowed to operate the dam as it is until 2006, rather than spend \$28 million on ways to help fish over the dam. Interior Secretary Bruce Babbitt called the Condit an example of a dam that has outlived its purpose. He added, "This is yet another example that river restoration is on the national agenda."

The 9th U.S. Circuit Court of Appeals ordered the FERC on 8/11 to increase protection for fish before renewing licenses for two hydroelectric dams on Oregon's McKenzie River. But the court also rejected requests by environmental groups and wildlife officials to require a broad review of the dams' overall environmental impact. The groups had argued that the Walterville and Leaburg dams were threatening populations of wild chinook salmon and bull trout. FERC renewed the dams' licenses for another 40 years in 3/97, but "an unusual alliance of environmental groups and state and federal agencies" sued in 1/98, calling provisions to protect the fish inadequate. **On 8/11/99 the court said FERC does not have to accept all recommendations by environmental agencies, but that it is required to accept proposals for "fishways," structures that allow fish to pass freely upstream and downstream.**

In Maine, three dams on the Presumpscot River that provide power for *Sappi* paper mills should be removed to improve the river's quality, four citizen groups told federal regulators on 8/25. *Sappi* filed an application with the FERC in January to renew federal licenses that expire in 2001 for 5 dams between Windham, ME, and Westbrook. *Friends of the Presumpscot River* (FPR) and other groups oppose the renewal, saying the river has been severely damaged by the dams. FPR President Will Plumley said the river bottom is covered with "slime and muck," it is unnaturally warm and that rapids that allow the river to recapture oxygen are now gone. The three dams the groups want to remove provide only 3 MW of power. *Sappi* argues the dams are a clean, renewable energy source that is less harmful to the environment than other forms of energy. The company also has proposed making several improvements to the dams, including making it easier for eels to migrate past the dams.

A *Philadelphia Inquirer* (7/22/99) editorial says Pennsylvania is "leading the charge" to destroy dams in an effort to "return some of

nature to nature." While the paper says, "Always, the economic benefits must be weighed against environmental cost," it says "here's a chance, finally, to restore some of what we've disturbed -- at minimum cost with much gain".

While environmental groups are primed to ensure that FERC enforces protection of the rivers, Ron McKitrick, a FERC environmental protection specialist, said most dams that undergo review are allowed to continue operating under new terms and conditions such as minimum water flow requirements and limited lake level fluctuations. Dam breaching, which recently resulted from the review of Edwards Dam in Maine, is not a common FERC response McKitrick said. Also a campaign by environmental groups such as *America Rivers* to remove dams "won't hold water," because the list of 121 breaching projects released by the group is not accurate, said Ron Corso, a former FERC official who now advises the hydropower industry. *American Rivers* released the list just before the removal of Edwards Dam in July in an effort to "suggest dam removal was a routine activity." Corso said more than 80% of the listed dams are not registered on the *National Inventory of Dams*.

Meanwhile, on 8/16/99 the Army Corps of Engineers (Corps) issued a "Finding of No Significant Impact (FONSI)" statement regarding four reversible hydropower turbines at the Russell Dam (Savannah River), and announced plans to ask a federal judge for permission to operate the \$600 million project. The dam's reversible turbines pump water back from Thurmond Lake to Lake Russell for reuse in power production, but the turbines also suck fish into the mechanism and kill them. Fish kills in 1998 sparked a lawsuit against the Corps by the state of South Carolina and the *National Wildlife Federation*, and the court ordered an injunction on the turbines until the Corps could prove they were safe. After \$34 million in environmental tests and programs, Corps spokesman Jim Parker said, "We've completed the environmental review process and we believe we've thoroughly addressed the issues." The FONSI says that while the turbines would kill millions of fish each year, the casualties would amount to less than 1% of Thurmond Lake's fish population. The Corps also said it will limit use of the turbines to reduce fish kills and plans to install a \$4.5 million oxygenation system to expand striped bass habitat. The agency also plans to evaluate the effects of the system for 7 yrs., and will

ask a federal judge to lift the injunction later this year.

In Washington, D.C. more than 100 members of the House have asked Pres. Clinton to remain open to the option of removing 4 dams on the lower Snake River in the state of Washington to help restore Pacific salmon runs. In a letter to the president, the 107 members – 95 Democrats and 12 Republicans – do not advocate dam removal, but recommend that it remain an option. Their letter "could mark a turning point" in the dam removal debate as the House members argue the issue is of national importance, a view long held by environmentalists. The letter's prime GOP author, Rep. Thomas Petri (WI) said, "We're simply asking that nothing be ruled out, and that a thorough and professional review of the different options be done". *Taxpayers for Common Sense* Executive Director Ralph DeGennaro said, "Lawmakers sent a message today that our resources should be targeted at the most promising solutions".

Removal of the 4 dams would mean the loss of less than 500 long-term jobs and the creation of 10,000 short-term ones, according to a Corps study. The preliminary draft, part of a 2 yr., \$20 million study, is the "most thorough analysis yet of the economic effect" of the dam breaching proposal. Within the first 10 yrs. of dam breaching, about 10,600 to 13,500 new jobs would be created. Over 20 years, about 3,800 to 4,700 new jobs would replace the 5,300 to 6,000 lost jobs. Proponents said the report is evidence that breaching will not cause an "economic meltdown." But Sen. Gordon Smith (R/OR) says the impact would be far more than 500 jobs. Smith said, "Find out what they're smoking, because they must be inhaling. This is preposterous." House Republicans recently passed a resolution to oppose the dam removal. Corps officials said the subject report is a "pre-decisional draft" and was not meant for release. It comes just months before the Corps will recommend whether or not to breach the dams.

A *Portland Oregonian* editorial (7/30) wants opponents and proponents of the dam breaching proposal -- "spin doctors of various persuasions" -- to put on the brakes until the Corps makes its recommendation to Congress. The paper cites pleas to Pres. Clinton by Northwest scientists to remove the dam and political meetings by Idaho's Republican congressional members to thwart the removal. The editorial said, "None of these efforts to color the facts

about dam breaching will take the region very far in developing strategies to recover the endangered salmon and steelhead...We need an evaluation from the Corps that is free of political pressure masquerading as scientific and economic certainty".

Oregon Gov. John Kitzhaber (D) proposed on 9/17 a "controversial" new plan to create a powerful, four-state *Columbia River Authority* that could help restore endangered salmon while protecting the Northwest's cheap electric rates. The authority, which someday could buy the *Bonneville Power Administration* (BPA) from the federal government, would include federal and tribal officials and have control over tough environmental and economic choices such as dam removal. The plan also would help stave off congressional efforts to make BPA earn a profit for the federal government by raising electrical rates, which could cost the region \$500 million/yr. Critics say the 20-year-old *Northwest Power Planning Council*, which is charged with balancing power and fish needs, lacks the federal authority and key tribal representation to work effectively and decisively. Some environmentalists and consumer advocates praised Kitzhaber "for showing the sense of urgency behind regional cooperation." And Montana Gov. Marc Racicot (R) said he supports a regional planning authority. However, the plan could meet stumbling blocks in Washington state, which is most heavily dependent on BPA power, because changes could reduce its share. Bruce Loveline, executive director of the *Columbia River Alliance*, says it may be difficult to secure the act of Congress needed to create the new authority because the Northwest congressional delegation is "small and short on seniority". Kitzhaber said he wants the proposal ready by the end of the year.

Rep. Mike Simpson (R/ID), Sen. Larry Craig (R/ID) and Ron Brown of *Flash Technology Corp. of America* offered alternative ideas to removing dams to save Snake River salmon. Brown said strobe lights placed underwater could divert juvenile salmon, which "strongly dislike" the lights, around the dams, while other suggestions include a man-made channel and in-line fish hatcheries.

Sources: *Sacramento Bee*, 8/17/99; Robert Pavey, *Augusta Chronicle*, 8/16/99; David Anderson, *Eureka [CA] Times- Standard*, 7/21/99; Marta W. Aldrich, *AP/Birmingham News online/others*, 7/19/99; David Pace, *AP/Birmingham News online*, 9/7/99; *National Hydropower Association release*,

9/2/99; Bob Egelko, *AP/Portland Oregonian*, 8/12/99; Tom Bell, *Portland [ME] Press Herald*, 8/26/99; Traci Watson, *USA Today*, 9/23/99; Michael Paulson, *Seattle Post-Intelligencer*, 8/5 and 9/23/99; *Taxpayers for Common Sense* release; Jonathan Brinckman, *Portland Oregonian*, 7/30/99; John Hughes, *AP/Seattle Post-Intelligencer*, 7/29/99; Steve Suo, *Portland Oregonian*, 9/18/99; *AP/Portland Oregonian*, 9/17/99; Brent Hunsberger, *Portland Oregonian*, 9/17/99; and National Journal's *GREENWIRE, The Environmental News Daily*, 1/14, 5/27, 7/22, 8/3, 8/5, 8/12, 8/18, 8/26, 9/7, 9/20, 9/23/99

Miscellaneous River Issues

IL Wetland Settlement - A quarry operator has agreed to pay \$7.5 million to settle a lawsuit alleging the company destroyed 37 acres of high-quality wetlands while mining rock in Will County along the Des Plaines River. The settlement by Chicago-based *Material Service Corp.* represents a record payout for a wetlands violation in the history of the U.S. Army Corps of Engineers (Corps), officials said. The lawsuit, filed in 1995 by the U.S. attorney's office in Chicago, accused the company of violating the Clean Water Act. At a quarry site near Romeoville, *Material Service* allegedly dredged material from the wetlands and redeposited it in the adjacent waters of the Des Plaines River without a permit--in the process destroying marsh, meadow and extremely rare prairie land. Though it denies any wrongdoing or liability, the company agreed to pay a \$500,000 penalty to the U.S. government and contribute an additional \$7 to \$7 million to acquire land and restore the wetlands in portions of the lower Des Plaines and Kankakee River Valleys. According to studies by the U.S. Fish and Wildlife Service, the *Material Service* site near Romeoville still contains about 19 acres of wetlands sitting over dolomite rock, fully one-fourth of this type of prairie known to remain on Earth. The site serves as a habitat for a variety of endangered and rare plant and animal species, including the Hine's emerald dragonfly, the Blanding's turtle, the great egret, and tufted hair grass, officials said. The settlement, filed in mid August in federal court, needs to win the approval of U.S. District Judge Ann Williams before the lawsuit can be dismissed. In an agreement with the Corps, the *Corporation for Open Lands* will administer how the \$7 million will be spent on acquiring land and restoring wetlands.

"Projects will include reintroducing threatened and endangered species, returning water to drained and damaged areas, and protecting streams and wetlands from further damage," said Lt. Col. Peter Rowan, the Army Corps commander in Chicago. Source: Matt O'Connor, *Chicago Tribune*, 8/11/99

Appalachian Clean Streams - Kathy Karpan, director of the Interior Dept.'s Office of Surface Mining (OSM), approved \$68,000 in funding on 8/17 for an *Appalachian Clean Streams Initiative* project in Pennsylvania. The project will be funded under OSM's Watershed Cooperative Agreement Program, announced in January. Sources: *OSM release*, 9/18/99; and National Journal's *GREENWIRE, The Environmental News Daily*, 1/5 and 8/19/99

OH River Barge Spill - At least 60,000 gallons of gasoline spilled into the Ohio River on 8/9 when four barges carrying gasoline and one barge carrying the toxic chemical *cumene* collided near Mount Vernon, IN. Conservationists "worried about the effects" of the gasoline and



cumene on the river and nearby wetlands as the Coast Guard "scrambled" to keep the leaks from getting any worse. Sources: *Louisville [KY] Courier-Journal*, 8/10/99 and National Journal's *GREENWIRE, The Environmental News Daily*, 8/10/99

Rio Grande Minnows - New Mexico government agencies and irrigators who draw water from the middle Rio Grande have sent a letter to Interior Secretary Bruce Babbitt notifying him of their intention to sue the federal government for designating 160 mi. of the river as a protected habitat for the endangered silvery minnow in 1997. The *Middle Rio Grande Conservancy District* fears the designation would divert water available for irrigation because it designates minimum flows of 100,000 acre ft./yr. -- so the river won't go dry. They say that violates a provision in the Endangered Species Act (ESA) which requires consideration of economic consequences for people

along the river. State engineer Tom Turney plans to file a separate lawsuit saying the designation also violates the National Environmental Policy Act, which requires federal agencies to consider the consequences of environmental law. The river was designated a protected habitat for the minnow 13 mos. after 10,000 minnows died when the water district diverted its entire flow for irrigation. Sources: Ben Neary, *Santa Fe New Mexican*, 7/27/99; and National Journal's *GREENWIRE, The Environmental News Daily*, 5/22 and 7/30/99

GA Construction Runoff Regs - "After years of legal battles with environmental advocates," Georgia officials are imposing new permitting regulations to control erosion from construction sites. The regulations, which will require developers to submit plans for controlling stormwater runoff, will be the strongest erosion control regulations in the country, according to Larry Hedges of the GA Environmental Protection Division. Sources: Dave Williams, *Augusta Chronicle*, 7/27/99 and National Journal's *GREENWIRE, The Environmental News Daily*, 7/29/99

Mercury Laden Rain - Rain and snow falling on Chicago contains 41 times more mercury than the level considered safe for water in the Great Lakes, according to a report by the *National Wildlife Federation, Lake Michigan Federation, Sierra Club, Environmental Law & Policy Center* and other groups. Polluted rainwater runs into the Great Lakes, where even the lowest levels of recorded mercury are four times USEPA safety standards for wildlife in the lakes. The report details the history of mercury in the lake. Ten years ago, scientists discovered that rain is the link between air pollution and increased evidence of mercury and PCBs in the Great Lakes. Since then, technology has enabled researchers to measure tiny traces of mercury in raindrops. "The data show that rain scrubs the air of the mercury that wafts out of coal plants and waste incinerators. But when that rainwater flows into the Great Lakes and other waters, it carries the mercury with it." Andy Buchsbaum of the *National Wildlife Federation* said, "This reverses what we think about rain and the ability of nature to clean up air pollution. We all thought that rain and nature would dilute pollution and bring it down to acceptable levels." The rain itself is not considered harmful, but it is the source of mercury that affects the food chain in the lakes. Sources: Peter Kendall, *Chicago*

Tribune, 9/14/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 9/14/99

Governors Support ESA Changes -

Montana Gov. Marc Racicot (R) said the primary goal of the *Western Governors' Association* is to revamp the 1973 Endangered Species Act (ESA). The *National Governors' Association* also supports changing the law. Together, the nation's governors are lobbying for three separate bills for change. Past bills failed, Racicot said, because they included too many changes within the auspices of one bill. Racicot said, "When there are 50 who unanimously support something or 18 governors in the *Western Governors' Association* who say this is the No. 1 legislative priority it's a serious problem...I just think it's in the best interest of the people and the plants and the animals that are involved with these issues if we can do something with recovery, flexibility, incentives and funding." Sen. Pete Domenici (R/NM) is working on a bill that would give states more say in protecting species within state borders. Racicot said revisions to the ESA should concentrate on recovery, rather than continuing to list species as threatened or endangered, and that more money is necessary to do that. He added that states, federal agencies and private landowners should be given the chance to enter conservation agreements before a species is listed. Sources: Erin P. Billings, *Billings Gazette*, 9/10/99 and National Journal's GREENWIRE, *The Environmental News Daily*, 9/10/99

Global Warming Effects in GA? -

Following reports that rising water temperatures in the Chattahoochee River are threatening trout populations, the Georgia Department of Natural Resources is testing seven sites in the river to determine "how bad the temperature situation is." Water heated from parking lots, roads and other hard surfaces runs off into the water and raises the temperature. Trout will die if the water temperature stays above 77 °F for too long. The state is now studying growth rates of fish in parts of the Chattahoochee, which is considered "Georgia's premier trout stream," and will begin testing water quality next year. It will also conduct an economic impact study to determine the value of the fishery. Results from temperature studies are expected by the end of the year. Sources: Cheryl Crabb, *Atlanta Constitution*, 8/25/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 8/27/99

IN Fish Concerns - A *Purdue University* survey of 2,700 fishers found that more than 600,000 Indiana residents – half of them children – may be regularly eating fish tainted with PCBs. Eighty percent of fish tested annually in the state contain PCBs. Sources: *Chicago Tribune*, 8/3/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 8/5/99

VA Environmental Concerns - Virginia's air and water have improved since the mid-1980s, but disappearing wetlands and population growth are creating new environmental problems, according to a new study by the *Virginia Commonwealth University Center for Environmental Studies*. The study, which the authors say is the first to use a scientifically valid statistical method to measure environmental trends, used 400,000 state and federal records to create the *Virginia Environmental Quality Index*. The index measures changes in air and water pollution, toxic chemicals, solid waste, wetlands, species and population growth. Despite overall improvements, the study found a decline in wetlands and open space and an increase in dangerous compounds in some areas. The study is available on-line at <http://www.vcu.edu/cesweb/>. Meanwhile, state health officials issued an advisory in late July warning people against eating fish from a 12-mile stretch of Levisa Fork in southwest Virginia because of PCB contamination. Sources: Rex Springston, *Richmond Times-Dispatch*, 7/31 and 8/4/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 8/3 and 8/4/99

AL Environmental Poll - In a statewide poll released in late July, 68% of Alabamians said environmental protection should be a priority, even at the expense of some jobs and business activity. Sources: Jessica Saunders, *AP/Birmingham News online*, 7/30/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 8/3/99

ATV Ban in Ouachita NF - Ouachita National Forest officials banned all-terrain vehicles from 57,000 acres of forest land on 8/25 because of concerns over the vehicles' effect on erosion and water-quality problems. The vehicles will be prohibited from nearly 12,000 acres of national forest at Wolf Pen Gap and 45,000 acres south of the Little Missouri River. Forest recreation supervisor Steve Cannell said the main problem in recent years has been "primarily from ATV users creating their own trails... and riding in streams." Despite the ban,

"there's still plenty of access" said Jim Watson, district ranger for the Little Missouri River watershed. Sources: Rodney Bowers, *Little Rock Arkansas Democrat-Gazette*, 8/26/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 8/27/99

KS River Suit - Two environmental groups sued the USEPA in federal court in late August over charges the agency failed to enforce a 25-year-old law that requires all rivers to be clean enough for fishing and swimming. The *Sierra Club* and the *Kansas Natural Resource Council* filed suit to ensure the EPA would follow through on its promise to implement new standards to curb pollution in Kansas rivers. The EPA says the new regulations, which should be ready this fall, would measure runoff pollution from farms, urban lawns and parking lots. Cities and farmers say the new regulations will cost too much. Kansas environmentalists aim to change the state's reputation "of having the dirtiest water in the nation." About 69% of the state's 15,000 miles of rivers do not meet state water standards -- a "big improvement" from 1996, when that statistic was 97%. Sources: Jean Hays, *Wichita Eagle*, 8/25/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 8/25/99

Subsidized Compliance in IN - A proposed government payback program in Indiana would reward some of the state's largest companies for complying with environmental laws. Under the *100% Club Plan*, announced earlier this year by Lt. Gov. Joe Kernan (D), companies would win rebates for staying within permit limits for air, water or solid waste releases. Possible annual cash rebates could total \$25,000 per company. But environmentalists criticize the proposal, saying companies could receive the cash but still pollute the air with millions of pounds of emissions each year. John Blair, pres. of *Valley Watch* said, "You could have a power plant that's operating under its permit that gets this reward, but is one of the biggest polluters in the world." The goal of the plan is for 100% of the state's companies to meet environmental standards, according to Dept. of Environmental Management (DEM) Commissioner Lori F. Kaplan. The impetus behind the program is to create an incentive for sub-par companies. Kaplan said, "Our hope is, by bringing recognition to those companies that are in compliance, it will encourage other companies to step up their efforts to reach compliance and go beyond." State officials estimate 2,000 permit-holding companies

out of 3,000 already are in full compliance. Although complete prospects for revenue loss are not yet available, DEM Deputy Commissioner Tim Method said rebates could add up to \$1 million. Sources: George McLaren, *Indianapolis Star/News*, 8/24/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 8/24/99

WI Land Purchase - Marking the largest land acquisition in the state's history, Wisconsin Gov. Tommy Thompson (R) and the state Dept. of Natural Resources have reached a \$25 million deal with an Illinois paper company to buy more than 32,000 acres of wilderness. The purchase is designed to protect 42 mi. of land along rivers and streams and 6 mi. of lakeshore. Several parts of the undeveloped land owned by the *Packaging Corp. of America* would connect tracts of land from previous state acquisitions. The state will use some of the land to create new natural areas, including a 2,500-acre Woodboro Wildlife Area and nearly 1,760 acres on the Wisconsin River for the Menard Island Resource Area. The state plans to offer 6,800 acres for sale to Indian tribes. Sources: Jenny Price, *AP/St. Paul Pioneer-Press*, 8/23/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 8/23/99

MT Coal Mining Suit - The Montana Dept. of Environmental Quality filed a lawsuit in late July against Tennessee-based coal mining company *Mountain Inc.*, seeking \$531,200 for environmental violations at its now-closed *Bull Mountain Mine*. Sources: Erin P. Billings, *Billings Gazette*, 9/21/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 7/22/99

CA Ballast Water Regs - Both houses of the state Legislature passed a bill to regulate ballast water discharges by cargo ships in California waters. The bill would require reporting of ballasting activities and require high-seas ballast water exchange. Sources: *Journal of Commerce*, 9/15/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 9/16/99

IA Cities' Impact on Rivers - The state Environmental Protection Commission approved on 9/20 a plan to study the impact of cities on Iowa's rivers. As part of one of the largest ever expansions in state water monitoring, samples of river water above and below 10 Iowa cities will be taken twice a year and analyzed for pollutants. Sources: Lynn Okamoto, *Des Moines Register*, 9/21/99; and National Journal's GREENWIRE,

The Environmental News Daily, 9/23/99

Atrazine Contamination - High levels the weed killer, *Atrazine*, are turning up in water supplies across the Midwest, increasing the cancer risk for bottle-fed infants, according to a report released in late July by the *Environmental Working Group* (EWG). The report says tap water in nearly 800 communities was contaminated with the chemical which is used on corn, and has been linked to cancer in high doses. The study analyzed more than 127,000 tap water sample test results over the past 5 yrs. in 7 states. At least 20 communities had single-day readings that were 4 times the federal limit. The USEPA said it has been conducting a review of atrazine because of "special concerns for children's exposure," though it insisted that water supplies are safe. That review is expected to be finished by next year. The Denver-based *American Water Works Assn.* (AWWA) called for stricter protections to keep atrazine out of water supplies. Dave Whittaker of *Novartis Crop Protection, Inc.*, the largest manufacturer of atrazine, "called the report a bogus attempt to discredit a safe and reliable herbicide." He criticized the EWG for failing to have the report scientifically peer-reviewed, which would have evaluated the group's methodology. Bruce Knight of the *National Corn Growers Assn.* said, "You can tell the study was done more with promotion and public relations and scare in mind than with facts and science and the real risks, or none, associated with any of these products." Sources: Libby Quaid, *AP/Yankton [SD] Press & Dakotan*, 7/29/99; George McLaren, *Indianapolis Star/News*, 7/29/99; Paul Barton, *Cincinnati Enquirer*, 7/29/99; AWWA release, 7/28/99; Mansur Igoe, *Kansas City Star*, 7/29/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 7/29/99

TVA/EPA Pact Signed - The Tennessee Valley Authority (TVA) and USEPA signed an agreement on 8/23/99 to collaborate on improving management of the region's natural resources. The agreement calls for cooperation on erosion, water quality and air pollution in areas including the Great Smoky Mountains National Park. Specific projects will be decided in the next few months. Some of the first concerns likely to be addressed are restoring wetlands and reforesting land depleted by chip mill harvesting. While generally supportive of the pact, *Tennessee Valley Energy Reform Coalition* Executive Director Stephen Smith said he is concerned the agreement may hinder the EPA's oversight of TVA's electric

production program. Sources: Jacque Billeaud, *Knoxville News-Sentinel*, 8/25/99; Duncan Mansfield, *AP/Birmingham News online*, 8/25/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 8/25/99

Natural Resource Polls

Republicans Views on the Environment:

Republican primary voters care more about the environment than tax cuts when it comes to choosing a presidential candidate, according to a *National Environmental Trust* poll of likely GOP voters in 5 early primary and caucus states. In New Hampshire, 94% of 405 people polled said protecting the environment was "very or somewhat important," compared to 89% for tax cuts and 57% for abortion. The poll found similar results in Iowa, California, New York and South Carolina. But likely Republican voters expressed stronger feelings about crime, military readiness, Social Security, education and family values than the environment. Still, state Sen. Rick Russman (R), who chairs the Senate Environment Committee, said the poll confirms that the Republican Party "has been missing the boat" on environmental issues. More detailed questioning showed that improving air and water quality, cleaning up toxic wastes and regulating pesticides were the most important environmental goals, while curbing global warming, protecting endangered species and preventing sprawl were less important. Independent voters were more likely than registered Republicans to call themselves environmentalists and consider environmental protection "very important." The telephone poll, conducted 8/15-8/18/99, has a 5% margin of error. Sources: *Associated Press*, 9/10/99; and National Journal's GREENWIRE, *The Environmental News Daily*, 9/13/99

Public Views on Land Protection :

Fifty-seven percent of people living in the West and 63% of those surveyed nationwide believe not enough national forest land is protected from commercial development, according to a poll conducted by the *Mellman Group Inc.* Seven percent of Westerners and 6% of nationwide respondents said too much land is already protected as wilderness. The remainder surveyed believed the correct amount of forest land is protected. The poll of 800 "likely voters" also found 62% surveyed "across gender, political party and regional lines" support the protection of roadless areas in national forests. More than 70%

surveyed favor a ban on oil drilling, logging and mining in roadless areas. The *Wilderness Society*, the *National Audubon Society* and the *Heritage Forests Campaign* commissioned the poll, which has a margin of error of plus or minus 3.5%. Sources: *AP/Salt Lake Deseret News*, 7/28/99; and National Journal's *GREENWIRE*, *The Environmental News Daily*, 7/18 and 7/29/99

Biology of Fish Proceedings

The complete proceedings of the 1998 *International Congress on the Biology of Fish* are available free for downloading (in Adobe Acrobat format) at <http://www.fishbiologycongress.org>. Information on how to get printed copies of previous proceedings is also provided. The next *International Congress on the Biology of Fish* will be held in Aberdeen, Scotland on 7/23-26/00. Information on this meeting is available at the website. Planning for individual Symposia for the Aberdeen Fish Biology Congress are just starting. Suggestions or interest in being involved in organizing a session should be directed to: Don D. MacKinlay, Habitat & Enhancement Branch, Fisheries & Oceans Canada, 555 West Hastings St., Vancouver BC V6B 5G3 CANADA, (604) 666-3520, FAX (604) 666-6894, e-Mail: MACKINLAYD@PAC.DFO-MPO.GC.CA

Vegetation Symposium Abstracts

A limited number of copies of the Proceedings of the Symposium entitled, *Vegetation of the Upper Mississippi and Illinois River System: Status, Management and Ecological*

Linkages are available from the Upper Mississippi River Conservation Committee (UMRCC). The symposium was held in La Crosse, WI on 9/21-9/22/99. The Proceedings consist of abstracts of papers presented at that meeting. Direct requests for single copies to: Jon Duyvejonck, Coordinator, UMRCC, 4469-48th Avenue, Court, Rock Island, IL 61201, (309) 793-5800, jon_duyvejonck@fws.gov.

Mississippi River Status Report

"The declines in key native species across many trophic levels signal a deterioration in the health of this riverine ecosystem. The Mississippi River ecosystem is often heralded as a multiple-use resource, and human use of the river and its floodplain for various purposes is expected to increase while inputs of sediment, nutrients, and potentially harmful chemicals from the watershed continue. Clearly, the greatest challenge on the Mississippi and other large rivers is to maintain ecological integrity while sustaining multiple human uses of the ecosystem.

'Evidence is mounting that the cumulative effects of human activities have already exceeded the ecosystem's assimilative capacity. The abundances of many key native organisms, including submersed plants, native pearlymussels, fingernail-clams, certain fishes, migratory waterfowl, colonial waterbirds, songbirds, and mink, have decreased along substantial reaches of the river in recent years or decades. The degradation of the Mississippi River delta represents a severe, nationally significant loss of wetland resources. Sediment deficiency is aiding in habitat destruction in

Louisiana's coastal zone while, ironically, sediment deposition is threatening to destroy aquatic habitats in the impounded Upper Mississippi River.

'Abundances of undesirable nonindigenous organisms in the river have increased along with these other problems...Recent declines in benthic invertebrates and submersed aquatic plants constitute a partial, yet significant, collapse in the food web supporting certain key fish and wildlife species...The riverine ecosystem of the Mississippi has undergone many changes. Most of the natural changes have occurred gradually over hundreds or thousands of years, whereas human-induced changes have occurred rapidly and recently. Several factors have apparently contributed to the recent declines in the river's flora and fauna, including habitat loss and degradation, point and nonpoint pollution, toxic substances, commercial and recreational navigation, deterioration of water quality during drought periods, reduced availability of key plant and invertebrate food resources, and invasions of nonindigenous species..."

Source: Wiener, J.G., C.R. Fremling, C.E. Korschgen, K.P. Kenow, E.M. Kirsch, S.J. Rogers, Y. Yin and J.S. Sauer. 1998. *Mississippi River*. In: M.J. Mac, P.A. Opler, C.E. Puckett Haeker, & P.D. Doran, editors. *Status and Trends of the Nation's Biological Resources*, Vol. 1. U.S. Geological Survey Reston, VA. pp.

Single copies of the entire publication are available free of charge from: Kathy Mannstedt, Librarian, USGS-UMESC, 2630 Fanta Reed Rd., La Crosse, WI 54603, (608) 781-6215

Meetings of Interest

Nov. 7-10: Southeastern Association of Fish and Wildlife Agencies Annual Conference, Greensboro, NC. Contact: Sid Baynes, (919) 733-7123, baynes.sid@coned.wildlife.state.nc.us

Nov. 8-9: The Missouri River Voyage of Discovery Conference, Baymont Inn & Suites, St. Charles, MO. Contact: American Rivers, (877) 228-0861, <http://www.americanrivers.org>

Nov. 15-17: International Conference on the Use of Property Rights in Fisheries Management, Fremantle, Western

Australia. Contact: petrconf@iinet.net.au; <http://www.fishrights99.conf.au>

Nov. 16-17: Wetlands & Remediation, Salt Lake City, UT. Contact: (614) 424-6510 or Nehrungk@battelle.org

Nov. 29 - Dec. 3: Congress on Recreation and Resource Capacity, Snowmass Village, Aspen, CO. Contact: Susan Scott Lundquist, (970) 491-4865 or FAX (970) 491-2255.

Dec. 4-9: Watershed Management to Protect Declining Species, Seattle, WA.

Contact: Amer. Waterworks Assoc., (425) 649-7140

Dec. 5-8: 61st Midwest Fish and Wildlife Conference, Sheraton Hotel and Towers, Chicago, IL. Contact: Doug Austen, (217) 785-5935, dausten@dnrmail.state.il.us

Dec. 6-10: Land Satellite Information in the Next Decade III Conference, Doubletree Hotel, Denver, CO. Contact: Kass Green (510) 654-6980, <http://www.asprs.org>

Aug. 20-24: 130th Annual Meeting of the

American Fisheries Society, Adam's Mark Hotel, St. Louis, MO. Contact: Betsy Fritz, (301) 897-8616, ext. 212; bfritz@fisheries.org

Feb. 3-5: National Whirling Disease Symposium, Coeur d'Alene Resort, ID. Contact: Whirling Disease Foundation, (406) 585-0860

Feb. 8-10: International Conference on Risk Analysis in Aquatic Animal Health, Office International des Epizooties, Paris, France. Contact: K. Sugiura, 011/33-0144-151888, k.sugiura@oie.int

Mar. 24-28: North American Wildlife and Natural Resources Conference, Hyatt Regency O'Hare, Chicago, IL. Contact: Richard McCabe, (202) 371-1808

Apr. 4-6: International Hazardous Material Spills Conference, Regal Riverfront Hotel, St. Louis, MO. Contact: <http://www.nrt.org/hazmat2000>

May 2-6: AQUA 2000, "Responsible Aquaculture in the New Millennium", Acropolis Convention Centre, Nice, France. Contact: John Cooksey, worldaqua@aol.com

May 21-24: Missouri River Management: It's Everybody's Business, Radisson Inn, Bismarck, ND. Contact: Roger Collins, (701) 250-4492, roger_collins@fws.gov, <http://infolink.cr.usgs.gov/events/00.htm>

July 23-26: International Congress on the Biology of Fish, Aberdeen, Scotland. Contact: Don D. MacKinlay, Fisheries & Oceans Canada, (604) 666-3520, FAX (604) 666-6894, e-Mail: MACKINLAYD@PAC.DFO-MPO.GC.CA or <http://www.fishbiologycongress.org>

Congressional Action Pertinent to the Mississippi River Basin

Endangered Species Act Amendments

S. 1100 and S. 1210: J. Chafee, R/RI. Addresses designation of critical habitat, and assists in the conservation of endangered and threatened species of fauna and flora found throughout the world.

S. 1305: C. Thomas, R/WY: Improves the listing, recovery planning, and delisting process, and for other purposes.

H.R. 494, 495 and 496: W.M. Thomas, R/CA. Endangered Species Fair Regulatory Process Reform, Land Management Reform and Criminal and Civil Penalties acts,

H.R. 960: G. Miller, D/CA. Strengthens the commitment to protect wildlife, safeguard children's economic future, and provide assurances to local governments, communities, and individuals.

H.R. 1101: R. Pombo, R/CA. Improves the ability to prevent flood disasters.

H.R. 1763: K. Calvert, R/CA. Limits required mitigation costs for public construction projects to less than 10% of total project cost.

H.R. 2017: W. Herger, R/CA. Enables Federal agencies responsible for the preservation of threatened and endangered species to rescue and relocate individuals that would be taken in the course of certain reconstruction, maintenance, or repair of Federal or non-Federal manmade flood control levees.

H.R. 2131 and 2253: K. Calvert, R/CA. Prohibits the requirement to mitigate for impacts of past activities, and the use of any

item or information obtained by trespassing on privately owned property, or otherwise taken from privately owned property without consent of the property owner.

Environment

S. 352: State and Local Government Participation Act of 1999, C. Thomas, R/WY and H.R. 2029: G. Radanovich, R/CA. Amends the National Environmental Policy Act (NEPA) of 1969 requiring Federal agencies to consult with State, county, and local agencies and governments on environmental impact statements.

S. 481: Environmental Crimes and Enforcement Act of 1999, C.E. Schumer, D/NY. Provides for protection of government employees and the public from environmental crimes.

S. 1066: P. Roberts, R/KS. Amends the National Agricultural Research, Extension, and Teaching Policy Act of 1977 to encourage use of and research into agricultural best practices to improve the environment, and for other purposes.

S. 1090: J. Chafee, R/RI: Reauthorizes and amends the Comprehensive Environmental Response, Liability, and Compensation Act of 1980.

S. 1279: R. Kerrey, D/NE. Improves environmental quality, public use and appreciation of the Missouri River and provides additional authority to the Army Corps of Engineers to protect, enhance, and restore Mo. River fish and wildlife habitat.

S. 1426, T. Harkin (R/IA), T. Daschle (D/SD), P. Leahy (D/VT), R. Kerrey (D/NE), K. Conrad (D/ND), and T. Johnson (D/

SD): Amends the Food Security Act of 1985 to promote the conservation of soil and related resources, and for other purposes.

S. 1622: B. Lincoln (D/AR), B. Frist (R/TN), M. Landrieu (D/LA), T. Hutchinson (R/AR), J. Breaux (D/LA), and R. Durbin (D/IL). Provides economic, planning, and coordination assistance for the development of the lower Mississippi River region.

H.R. 408: C. Peterson, D/MN. Amends the Food Security Act of 1985 to expand the number of acres authorized for inclusion in the Conservation Reserve Program (CRP).

H.R. 525: Defense of the Environment Act of 1999, H.A. Waxman, D/CA. Requires any Congressional provision that reduces environmental protection to: (1) identify and describe the provision, (2) assess the extent of the reduction, (3) describe actions taken to avoid the reduction, and (4) recognize any statement of the Comptroller General in assessing the reduction.

H.R. 728: K. Lucas, D/KY. Amends the Watershed Protection and Flood Prevention Act providing cost share assistance for rehabilitation of structural measures constructed as part of water resource projects previously funded by the Secretary of Agriculture.

H.R. 1836: D. Bereuter, R/NE. Balances the wind and water erosion criteria and wildlife suitability criteria for the 18th CRP signup.

Hydropower

S. 740: L. Craig, R/ID and E. Towns, D/NY. Amends the Federal Power Act to

improve hydroelectric licensing processes by granting the FERC statutory authority to better coordinate participation of other agencies and entities, and for other purposes.

Population Growth

H. Con. Res 17: Population Growth

Resolution T.C. Sawyer, D/OH. Expresses the sense of Congress that the U.S. should develop, promote, and implement, at the earliest possible time and by voluntary means consistent with human rights and individual conscience, the policies necessary to slow U.S. population growth.

Property Rights

S. 333: P. Leahy, D/VT, H.R. 598: R. Santorium, R/PA, and H.R. 1950: S. Farr, D/CA. Amends the Federal Agriculture Improvement and Reform Act of 1996 to improve the farmland protection program.

S. 1028: O. Hatch, R/UT. Simplifies and expedites access to Federal courts for parties whose rights and privileges, secured by the Constitution, have been deprived by actions of Federal agencies, entities or officials acting under color of State law.

S. 1202: B.N. Campbell, R/CO. Requires a warrant of consent before land inspections may be carried out to enforce any law administered by the Secretary of the Interior.

H.R. 1002: Declaration of Taking Act,, D. Hunter, R/CA. Amends the subject act to require that all government condemnations of property proceed under that Act.

H.R. 1142: D. Young, R/AK. Ensures that landowners receive equal treatment to the government when property must be used.

H.R. 2550: T. DeLAY (R/TX). Compensates owners of private property for the effect of certain regulatory restrictions.

Public Lands

S. 338: B.N. Campbell, R/CO; S. 568: C. Thomas, R/WY and H.R. 154: J. Hefley, R/C. Establish fee systems for commercial filming activities on public lands.

S. 446: B. Boxer, D/CA. Provides for permanent protection of U.S. resources in the year 2000 and beyond.

S. 510: B.N. Campbell, R/CO and H.R.

883: D. Young, R/AK. Preserves U.S. sovereignty over public and acquired lands, and preserves state sovereignty and private property rights in non-federal lands surrounding public and acquired lands.

S. 532: D. Feinstein, D/CA and H.R. 1118: T. Campbell, R/CA. Increases funding to resume state grant funding for the Land and Water Conservation Fund and development of conservation and recreation facilities in urban areas under the Recreation Recovery Programs.

S. 826: C. Thomas, R/WY. Limits federal acquisition of lands located in States where 25% or more of the land in the State is owned by the U.S.

S. 1049: F. Murkowski, R/AK, and H.R. 1985: B. Cubin, R/WY. Improves administration of oil and gas leases on Federal lands, and for other purposes.



H.R. 488: Northern Rockies Ecosystem Protection Act of 1999, C. Shays R/CT. Special designation of lands in the states of ID, MT, OR, WA, and WY.

H.R. 701: D. Young, R/AK and H.R. 1118 T. Campbell, R/CA. Provides funding for Land and Water Conservation Fund, Urban Parks and Recreation, and Teaming With Wildlife.

H.R. 798: G. Miller, D/CA. Provides for permanent protection of U.S. resources in FY 2000 and beyond through **Land and Water Conservation Fund** funding, **Urban Parks and Recreation** and various other conservation programs.

H.R. 1199. R.W. Pombo, R/CA. Prohibits expenditure of **Land and Water Conservation Funds** for new National Wildlife Refuges without Congressional authorization.

H.R. 1207: B.F. Vento, D/MN. Prohibits the U.S. government from entering into

agreements related to public lands without Congressional approval.

H.R. 1284: Minnesota Valley Refuge Bill, D. Young, R/AK. Protects the Minnesota Valley National Wildlife Refuge and protected species to ensure that scarce refuge land in and around the Minneapolis, MN metro area are not subjected to physical and auditory impairment.

H. R. 1396: C. McKinney, D/GA. Saves taxpayers money, reduces the deficit, cuts corporate welfare, and protects and restores America's natural heritage by eliminating the fiscally wasteful and ecologically destructive commercial logging program on Federal public lands, and facilitates the economic recovery and diversification of communities dependent on the Federal logging program.

H.R. 1500: J. Hansen, R/UT. Accelerates the Wilderness designation process by establishing a timetable for completion of wilderness studies on Federal lands.

H.R. 2222: G. Miller, D/CA. Establishes fair market value pricing of Federal natural assets, and for other purposes:

Regulations

S. 746: Regulatory Improvement Act of 1999, S.M. Leven, D/MI. Improves the ability of Federal agencies to use scientific and economic analyses to assess cost-benefits and risk assessments of regulatory programs.

H.R. 1864: J. Hansen, R/UT. Standardizes public hearing processes for Federal agencies within the Dept. of the Interior.

H.R. 1866: J. Hansen, R/UT. Provides a process for the public to appeal certain decisions made by the National Park Service and the U.S. Fish & Wildlife Service.

Tennessee Valley Authority

S. 123: TVA Funding Act, R.D. Feingold D/WI. Phases out Federal funding for the Tennessee Valley Authority.

Water Resources

S. 294: R. Wyden, D/OR. Directs the Secretary of the Army to develop and implement a comprehensive program for fish screens and passage devices.

S. 507: Water Resources Development

Act, J. Warner R/VA and H.R. 1480: R. Shuster, R/PA. Provides for construction of various projects in U.S. rivers and harbors.

S. 685: M. Crapo, R/ID and H.R. 2456. Mike Simpson, R/ID. Preserves state authority over water within their boundaries and delegates states the authority of Congress to regulate water.

H.R. 1444: P. DeFazio, D/OR. Authorizes the Secretary of the Army to develop and implement projects for fish screens, fish passage devices, and other similar measures to mitigate adverse impacts of irrigation system water diversions in the states of OR, WA, MT and ID.

H. Con. Res. 86: E. Blumenauer (D/OR). Concurrent resolution expressing the sense of Congress regarding Federal decisions, actions, and regulations affecting water.

Water Quality

S. 20: Brownfield Remediation and Environmental Cleanup, F.R. Lautenberg D/NJ. Directs EPA to establish a grant program for States and local governments to inventory and conduct site assessments of brownfield sites. Defines brownfield sites as facilities suspected of having environmental contamination that could limit their timely use and can be readily analyzed.

S. 188: Ron Wyden, D/OR. Amends the

Federal Water Pollution Control Act (FWPCA) to authorize the use of State revolving loan funds for construction of water conservation and quality improvements.

S. 493: P. Sarbanes, D/MD. Requires the U.S. Army, Corps of Engineers to conduct pilot projects on toxic microorganisms in tidal and non-tidal waters.

S. 669: P. Coverdell, R/GA. Amends the FWPCA to ensure compliance by Federal facilities with pollution control requirements.

S. 914: B. Smith, R/NH and H.R. 828: J. Barcia, D/MI. Amends the FWPCA requiring discharges from combined storm and sanitary sewers to conform to the *Combined Sewer Overflow Control Policy* of the USEPA.

S. 968: B. Graham, D/FL. Authorizes USEPA to make grants to States for water source development to maximize the supply of water and protect the environment through development of alternative water sources, and for other purposes.

H.R. 155: Municipal Biological Monitoring Use Act, J. Hefley, R/CO. Amends the Clean Water Act.

H.R. 684: Farm Sustainability and Animal Feedlot Enforcement Act, G.

Miller, D/CA. Amends the Clean Water Act.

H.R. 1290: W.B. Jones, R/NC. Amends the FWPCA related to wetlands mitigation banking.

H.R. 1549: P. Visclosky, D/IN. Amends the FWPCA to establish a National Clean Water Trust Fund to carry out projects to restore and recover U.S. waters from damages resulting from FWPCA violations.

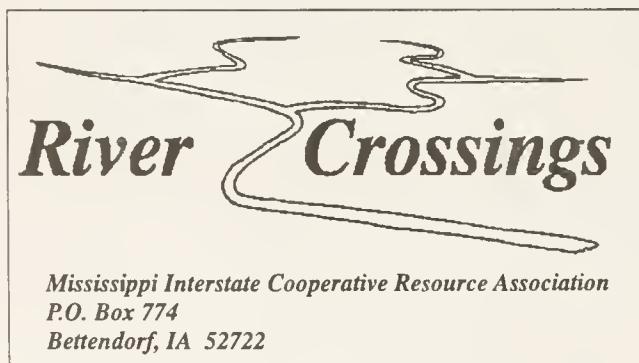
H.R. 1578: J. Hostettler, R/IN. Amends the wetland conservation provisions of the Food Security Act of 1985 and the FWPCA to permit unimpeded use of privately owned crop, range, and pasture lands that have been used for the planting of crops or the grazing of livestock in at least 5 of the preceding 10 years.

H.R. 1712: Bart Stupak, D/MI. Amends the FWPCA to authorize an estrogenic substances screening program.

H.R. 2328: J. Sweeney, R/NY. Amends the FWPCA to reauthorize the Clean Lakes Program.

H.R. 2449: Charles Norwood, R/CA. Amends the FWPCA relating to Federal facilities pollution control.

Source: Congressional Affairs Update, USFWS, 6/2, 6/25, 7/23 and 9/25/99



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River Crossings

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No. 6

Season's Greetings

Best wishes for the Holidays to all of our readers and to those who care about the future of our Nation's great rivers and their

magnificent natural resources! May the next millennia bring a new awakening to those who don't seem to understand or care about their own connection to the environment and the

importance of caring for it for themselves now, and for their children and grandchildren in the future.

Black Carp Invasion

The Mississippi Department of Agriculture and Commerce (MDAC) has approved the stocking of diploid black carp (*Mylopharyngodon piceus*) for control of snails in the production ponds of their state's catfish farms. Snails serve as intermediate hosts for a parasitic trematode that is infecting catfish fingerlings and significantly reducing production in some ponds. The MDAC has sole regulatory authority for the aquaculture industry in Mississippi, while the Mississippi Department of Wildlife, Fisheries & Parks (MDWFP) is left with the responsibility of managing the state's wild fish populations.

Unfortunately, the impacts of the MDAC decision will not only effect the fisheries resources of the state of Mississippi, but far beyond to the entire Mississippi River Basin, and fisheries authorities in other

likely proliferate in many areas, displacing native species. Experience has proven that to be the case with similar stockings (primarily in Arkansas) of the black carp's Asian cousins: the silver, bighead, and grass carps. The latter three species, released in the 1970s, 80s and early 90's for other aquaculture and pond applications, easily found their way to the wild.



Upper Mississippi River - Wilkinson Island fish kill - 97% Asian carp.

states are extremely upset. Once released into pond environments it is virtually certain that the exotic black carp will eventually escape to the wild. Once in the wild, the species will find it's way to the far corners of the entire Mississippi River Basin, and

These three species have now achieved large population numbers in many areas, and bighead carp are piling up like "cord wood" below Gavin's Point Dam on the Missouri River, Red Rock Dam on the Des Moines River, Keokuk Dam on the Upper Mississippi, and elsewhere in their attempts to reach new upstream river reaches. Norm Stucky, Missouri's Chief of Fisheries, says that "The bighead carp has become so abundant at some locations in his state's large rivers that commercial fishermen can't even lift their nets, they are so full of bigheads." Compounding this problem is that fact that the bighead carp is a plankton feeder that competes directly for food with the native, and potentially threatened

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paddlefish and bigmouth buffalo, as well as with forage species such as the gizzard shad. Also, the bighead has no known human use, since it's flesh is not considered desirable for eating by most people. Grass carp and silver carp are fast approaching the bighead's numbers; and all three species compete directly for food with the juvenile stages of native game fish. They also have the ability to capitalize on degraded habitats not preferred by native species. The later ability gives the Asian carps an even greater "edge" in out-competing native fish for survival in the "environmentally disturbed" river environments that we know today.

For example, in mid October Chuck Surprenant, U.S. Fish & Wildlife Service (USFWS) biologist in Marion, IL, investigating a fish kill in a levee borrow ditch on the Wilkinson Island Division of the Mark Twain National Wildlife Refuge, found the kill to be composed of over 97% Asian carp (see accompanying photo). This site is located approximately 2 mi. off the Mississippi River main channel, 90 mi. south of St. Louis, MO. The seasonally flooded ditch had dried up, and all that remained were a series of small pools. One pool, measuring approximately 12 ft. by 40 ft. had experienced a near total fish kill, with only a few common carp and some mosquitofish surviving. Surprenant counted all the dead fish in the pool and found 4 exotic and only 5 native species (1 individual each). The exotics were all carps: 157 silver, 18 bighead, 9 grass, and 30 common carp accounting (as noted above) for over 97% of the fish present. Surprenant said there were at least 5 other nearby locations, all with fish kills and all with similar species compositions.

Meanwhile in Indiana, state Nongame Aquatic Biologist Brant Fisher reported collecting "tons" of small (<12") bighead and grass carp, including one silver carp (the first reported for Indiana), from a nearly dried up ditch that drains directly to the Wabash River. The grass carp tested as diploid. Bighead carp had previously been collected from the Tippecanoe River (below Oakdale Dam) and on the East Fork of the White River below Williams Dam. Fisher suspects that the bighead can be found below every major dam on every large river in the state.

Biologists believe that based on the potential adult size of these species, observed elsewhere in the wild, that the Asian carp collected in these fish kills were all young or juvenile fish, demonstrating

that these species can and are reproducing in the wild. This is contrary to the earlier claims of some of the persons who originally introduced them into hatchery situations.

Clearly the black carp has the potential to follow in the footsteps of the other Asian carps, eventually becoming a permanent part of the Mississippi River Basin's fish fauna, and because of their habit of eating small shellfish and mussels, large populations of black carp could be devastating to the Basin's already suffering mussel and shellfish resources.

Despite these concerns the MDAC approved the stocking of black carp with only the following caveats:

- use of triploid black carp (thought to be sterile) is strongly recommended, but not required, and triploid certification is also not

required;

- diploid black carp can be stocked for an entire year until 12/2000, if triploid fish cannot be purchased; and
- facilities must be inspected and approved prior to stocking, and only permitted facilities can legally stock black carp.

As of late November, at least 7 catfish farmers in Mississippi have applied for and received MDAC black carp stocking permits. Meanwhile, the trematode parasite has been documented from only 5 of the state's fish farms. Stocking all of the state's 50,000 acres of catfish ponds at a rate of 2 black carp/acre would require at least 100,000 fish. Meanwhile, a native species, the redear sunfish or shellcracker (*Lepomis microlophus*), is an alternative species that could be used to control the snails. But this species is not favored by the industry because it is not readily available. In

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River Crossings is a mechanism for communication, information transfer, and coordination between agencies, groups and persons responsible for and/or interested in preserving and protecting the aquatic resources of the Mississippi River Drainage Basin through improved communication and management. Information provided by the newsletter, or opinions expressed in it by contributing authors are provided in the spirit of "open communication", and do not necessarily reflect the position of MICRA or any of its member States or Entities. Any comments related to "River Crossings" should be directed to the MICRA Chairman.

Missouri, however, rather than approving the stocking of black carp, the state is supplying limited numbers of shellcracker's to catfish farmers for this purpose.

The bottom line is that the European or common carp, introduced by German immigrants for food in the late 1800's, is so widespread today that it is considered by most people to be part of our native fish fauna. The four species of Asian carps (silver, bighead, grass, and black) are poised to follow the same path, and they are potentially far more threatening than the common carp because they compete more directly with native fish and shellfish for food and habitat. All of the Asian carps will thus likely be thought of by our grandchildren as "natives"; and even worse, our grandchildren may never see or know that species such as the paddlefish, buffalo, and others ever existed – all because of selfish, self-serving decisions made for the benefit of a few people in the late 1900's!

Since the release of species such as the Asian carps produce such significant and far reaching impacts, extending beyond the geographic area under jurisdiction of the decision making authority, it is perhaps time to declare them as "species of injurious wildlife" that would come under the federal jurisdiction of the Lacey Act. The latter would make possession of black carp (without a federal permit) illegal, and allow federal authorities (USFWS) to enter private property to confiscate and destroy any stocks being held illegally. Such authority, however, would require wide public support, and is deserving of public comment. For more information and to register opinions on any or all parts of this issue, contact: Gene Robertson, MDAC, (601) 359-1120, FAX (601) 254 6001, email: gene@mdac.state.ms.us; Dennis Riecke, MDWFP, (601) 364-2205, FAX (601) 364-2209, email: dennisr@mdwfp.state.ms.us; or Hannibal Bolton, USFWS, (703) 358-1718, FAX (703) 358-2044, email: hannibal_bolton@fws.gov

eggs of the native haze, goby, and stubby, while largemouth bass feed on goby minnows. Nobuo Ichihara, deputy superintendent of the Environment Agency, called the moats a "symbol of Japan" saying, "It's scary to think what may happen if we do a survey in five years – the native species may be all gone." His agency has been collecting the foreign fish, but experts say there are no permanent solutions because they breed so fast. Some officials say Emperor Akihito may have caused the "invasion" himself when, as crown prince in 1960, he brought a bluegill to Japan from Chicago as a gift from Mayor Richard J. Daley.

Meanwhile in the U.S., concern about the spread of the round goby, addressed in the last issue of *River Crossings*, has reached new proportions as the goby invasion has spread farther and faster downstream than previously thought. In August MICRA called for poisoning of the *Cal-Sag and Sanitary and Ship Canals* to stop the goby from spreading downstream of the site where next spring the U.S. Army Corps of Engineers plans to install an electric fish barrier to stop the downstream migration. Unfortunately, MICRA's request became bogged down in "regulatory red tape", and in early November we learned that the goby had already spread downstream past the site of the electric barrier. So if you live in the Mississippi River Basin, the round goby is now on it's way to a neighborhood near you!

We also learned recently that fishermen in the southern part of Lake Michigan have discovered the *fishhook water flea*, which scientists say could "wreak havoc" on the Great Lakes food chain. Biologist Patrice Charlebois said the flea's presence "is going to cause some change in the lake, though we don't know yet what that change will be." One possible result is that the water flea could displace the lakes' natural zooplankton. The flea originated in the same regions of Russia and the Ukraine as the invasive zebra mussel. As noted in the last issue of *River Crossings* the *Cal-Sag and Sanitary and Ship Canal* connects lower Lake Michigan with the Mississippi River Basin, so the flea will most certainly find it's way into the canal, and then follow the route of the round goby and zebra mussel downstream into the rivers of the Mississippi River Basin.

In California, Dept. of Fish and Game biologists are pondering what to do about an invasion of nonnative northern pike. A "two-day electro-fishing effort" in Lake

Davis this past summer recovered 28 northernns, nearly two years after the agency poisoned the lake's trout fishery to rid it of the "rapacious," nonnative pike. Fearing the pike would migrate into the Sacramento-San Joaquin Delta and threaten salmon and steelhead trout populations, officials "created a national uproar" by killing all animal life in the lake with a chemical treatment. Last summer, the agency restocked the lake with a million trout, but fishermen discovered that pike had returned to the lake in May, sparking fears that they "have reproduced and are probably entrenched again." This demonstrates the difficulty of eradicating an invading species once it is released to the wild. State officials have now installed metal grates on discharge pipes below the lake's dam. Called "sushi bars" by locals, they "shred" large fish coming out of the pipes. To eliminate smaller fish, officials may offer a bounty on pike and allow unlimited catches, hire commercial fishers to cull the population, install trap nets, or stock the lake with huge lake trout or salmon that would eat the smaller pike.

On Yellowstone Lake in Wyoming, a netting program to remove exotic lake trout "appears to be making a dent in the voracious and unwanted predator's population." Netters have removed 15,000 lake trout since the program began in 1996, after Yellowstone National Park officials estimated a population of 30,000 were preying on Yellowstone cutthroat trout. Fisheries biologist Jim Ruzycki said the practice is preventing the lake trout from spawning in large numbers, but netting may have to continue indefinitely "and at great expense" because it is unlikely it will ever completely eliminate the species. The cutthroat also faces a threat from whirling disease, a parasite-driven disease that attacks cartilage tissue and can deform the fish, making them easy prey. Yellowstone cutthroats may also be threatened by the New Zealand mudsnail that has reached numbers as high as 300,000/m² in the Madison River near Yellowstone's west boundary.

Scientists at Yellowstone, trying to assess the overall threat of exotic species in the Park, say that nearly every one of the grizzly bear's important food sources is threatened by outside species: whitebark pine trees are endangered by a European fungus called blister rust; and bison are condemned because officials say they carry the European disease brucellosis. Park botanist Jennifer Whipple has documented the

International Organism Exchange

While we in the Mississippi River Basin are concerned about round goby and black carp invasions, Japanese Emperor Akihito is worried about the invasion of **bass and bluegill!** Because of their "extremely strong breeding power," the bluegill and largemouth bass account for 99% of the fish populations in 8 of the 13 moats surrounding the the Imperial Palace. Bluegill eat the

presence of 185 exotic plants at Yellowstone throughout the park's history. About 78% of those foreign plants remain in the park and today comprise about 15% of Yellowstone's total plant diversity.

Elsewhere, a shipment of 36,000 bur reeds, a noxious weed from Europe, eluded U.S. Dept. of Agriculture (USDA) inspectors earlier this year and made their way into *Home Depot Inc.* stores in at least 17 states. The plant, imported from the Netherlands by a New Jersey company, is on the USDA's Noxious Weed list because it can choke waterways and hinder recreation in shallow waters. Since the plant was discovered on *Home Depot* shelves in Georgia, about 10,000 of the 11,800 packages shipped into the U.S. have been recovered. USDA officials said the shipment did not raise the usual "red flags" because the plant has never been in the U.S. before.

In Virginia and Maryland, the nutria, a 30 lb. rodent from South America, is one of the region's most visible invaders. But other foreign plant and animal species have contributed to problems such as aquatic grasses clogging waterways, whelks devouring Chesapeake Bay shellfish and weeds and pests spreading across croplands. The nutria alone is eating Maryland wetlands "into extinction", and this could kill the state's tourism, hunting and fishing industries. Robert Colona of the state Dept. of Natural Resources said, "If nothing is done, in 10 yrs. there will be extensive damage [to marshes] and many areas will be beyond the point of recovery." Eliminating the nutria is expected to cost several million dollars, and Virginia has already spent about a million dollars to monitor and control exotic pests such as fire ants and the cotton boll weevil.

To keep invasive species out of the Puget Sound ecosystem, the Washington Fish and Wildlife Dept. is drafting legislation that would require ships coming from California to discharge or exchange ballast water at least 50 mi. out at sea, or report themselves if they haven't. It is thought that the zebra mussel, round goby and numerous other species entered the Great Lakes via such ballast water dumping.

Nationwide, environmentalists have called for tighter restrictions on the importation of goods that may contain invasive plants and animals. They have also appealed for changes in the *World Trade Organization* (WTO) trading rules, which ironically require a country suspecting the importation

of nonnative species to prove how the imported good is going to be harmful to them. President Clinton created a task force earlier this year on preventing the spread of invasive plants and animals. But environmentalists say the Administration has refused to crack down on imported goods because of its strong support for international trade. The Administration has also resisted efforts to require ships to treat their ballast water.

Throughout the world the international exchange of organisms is threatening species diversity. Invading species are usually very successful when introduced to a new environment because they have no natural enemies, and they can usually find a niche to exploit. Unless something is done soon to address this issue, we will see nonnatives driving native species to extinction around the world, and we will eventually end up with homogenous populations of similar species worldwide. In the process we will lose a tremendous amount of genetic diversity. A situation not unlike what has already happened to small business and communities in this country. *Everytown U.S.A.* now has it's complement of the same name brand stores, and all of the local "native" businesses have been driven to extinction (bankruptcy in their case). Do we want to allow aquatic nuisance species to destroy our Nation's biodiversity and let our native flora and fauna go bankrupt?

Voice concerns about this issue to the President's Aquatic Nuisance Species Task Force, 4401 North Fairfax Drive, Suite 840, Arlington, VA 22203-1622, (703) 358-2308, FAX (703) 358-2044

Sources: Peter Landers, *Wall Street Journal*, 11/1/99; Peter Kendall, *Chicago Tribune*, 11/1/99; Maria L. LaGanga, *Los Angeles Times*, 7/30/99; AP/*Salt Lake Tribune*, 10/15/99; John Ritter, *USA Today*, 8/10/99; Dan Egan, *Salt Lake Tribune*, 9/7/99; AP/*Billings Gazette*, 9/1/99; Michael Milstein, *Billings Gazette*, 10/13/99; Erik Siemers, *Wall Street Journal*, 8/10/99; Dustin Wunderlich, *Washington Times*, 10/28/99; Janet I. Tu, *Wall Street Journal online* [Northwest edition], 10/27/99; Robert McClure, *Seattle Post-Intelligencer*, 10/28/99; *Greenwire*, A *National Journal Daily Briefing*, 5/5, 7/30, 8/10, 9/7, 10/13, 10/15, 10/28, 11/1/99

Mass Extinctions of Freshwater Organisms

Freshwater ecosystems are as threatened as rainforests, and the latter are considered by many to be the most imperiled ecosystems on Earth! According to a Canadian study, just released, the U.S. could lose most of its freshwater species in the next century if steps are not taken to protect them. This, the first estimate of extinction rates of North America's freshwater animals, has found that they are the most endangered species group on the continent. "A silent mass extinction is occurring in our lakes and rivers," says author Anthony Ricciardi of *Dalhousie University* in Halifax. Ricciardi's study with coauthor Joseph Rasmussen of *McGill University* in Montreal is published in the October issue of "*Conservation Biology*."



Relatively little media attention has been given to freshwater species, the authors say, but these animals are in at least as much danger as land species. Since 1900, at least 123 freshwater animal species have been recorded as extinct in North America. Common freshwater species, from snails to fish to amphibians, are dying out 5 times faster than land species, and 3 times faster than coastal marine mammals, and the researchers say these estimates are "probably conservative because there have likely been extinctions of species that we did not know existed, as suggested by the fact that several extinct fishes are known from only a few specimens."

The authors predict that about 4% of freshwater species will be lost each decade if nothing is done to conserve them. Worldwide the situation is even more perilous – the *World Wide Fund (WWF)* said in September that 51% of freshwater species, from fish and frogs to river dolphins, are declining in numbers. The 1999 *Living Planet Report*, an annual index on the state of the world's natural wealth, presents the most reliable data available on forest area and populations of marine and freshwater species worldwide. It also

examines consumption of critical resources in 151 countries and its consequences.

"This report is a graphic call to reduce these negative trends as the world enters the 21st century," said Claude Martin, director general of WWF. "The observed declines in populations of freshwater species is particularly alarming as they indicate the extent of deterioration in the quality of the world's rivers, lakes and other wetlands."

To get a picture of how rapidly species extinction is accelerating, Ricciardi and Rasmussen compared current extinction rates with those from the fossil record. They calculate that the background rate of extinction for freshwater fish species is about **1 species every 3 million years**.

Ricciardi and Rasmussen predict that many species considered at risk will disappear within the next century. At risk species account for 49% of the 262 remaining mussel species, 33% of the 336 crayfish species, 26% of the 243 amphibian species, and 21% of the 1,021 fish species.

As noted in the two previous *River Crossings* articles, nonnative species pose serious threats to indigenous freshwater animals. Dams that obstruct river flow are also threats. Of 5.2 million km (3.2 million mi) of stream habitat in the lower 48 states, less than 2%, or about 100,000 km, is pristine enough to be federally protected, Ricciardi and Rasmussen say. Excess sediment, toxic contaminants and organic pollutants from agriculture threaten most U.S. waterways. Only 40 rivers longer than 200 km (125 mi) remain free flowing in the lower 48 states. "Such massive habitat deterioration threatens some of the world's richest freshwater faunal assemblages," the study says. Ricciardi and Rasmussen note that hundreds of U.S. dams are coming up for federal relicensing soon, providing an opportunity to reestablish natural flows in many rivers.

On another front, scientists working under the auspices of the *Organization for Economic Cooperation and Development* (OECD) are preparing "the equivalent of a world telephone book of life on Earth," a project that promises to revolutionize the study of biology and influence international environmental policy." The project, scheduled to begin late this year will be called the *Global Biodiversity Information Facility*. OECD science ministers approved the plan in June, and specialists have begun setting up a secretariat and work program with \$3 million in initial funding. At present, "the information is scattered in

dozens of centers; in museums and universities; in journals, drawers and card files," said Thomas Lovejoy of the *Smithsonian Institution*. "The idea is to put all this together and make it available to everybody" via the Internet. The facility will not only benefit students and researchers but also poor nations that are rich in species and have no data collections of their own. However, the task of weaving together existing records is expected to be complex, and researchers will be working to complement, not duplicate, the Clearing-house Mechanism set up for recording data under the *UN Convention on Biological Diversity*. Several countries are competing to host the program, but a final decision on the location is still pending.

Meanwhile, "the latest and most ambitious" biodiversity research published in the journal *Science* finds that "An abundance of species does indeed help ecosystems work better." An international team of 36 scientists conducted studies of eight grasslands across Europe. By planting several species of plants at test plots, the researchers found "uniformly" that decreasing the number of plant species leads to decreased productivity. David Tilman of the *University of Minnesota* found similar results at test fields in the Midwest. Tilman said the most recent conclusion "provides the strongest evidence yet that losing plant and animal species significantly decreases the ability of ecosystems to function." But a debate over the benefits of biodiversity has existed for years, and some scientists insist that species quality is more important to an ecosystem's stability than quantity. A mathematical model also published in *Science* found that "biodiversity itself may be less important than the ability of a few key species to withstand environmental irritants such as pollution."

However even in farming circles, concerns have recently been raised about the extinction of species. According to a report released by the *Worldwatch Institute* in September, "Thousands of plant species are nearing extinction, and the world's farmers are losing valuable crop alternatives..." Worldwide, more than 30,000 plant species are threatened, and in the U.S., 29% of all plant varieties are threatened, more than any other country. Australia and South Africa are also ranked high on the list. "The genetic diversity of cultivated plants is essential to breeding more productive and disease resistant crop varieties. But with changes in agriculture, that diversity is

slipping away," said *Worldwatch* researcher John Tuxill, who authored the report. "Biotechnology is no solution," Tuxill said, "We are increasingly skillful at moving genes around, but only nature can create them. If a plant bearing a unique genetic trait disappears, there is no way to get it back."

Until recently, gene banks, botanical gardens, and protected areas have been "the first line of defense" in maintaining plant diversity, but Tuxill notes that these need higher levels of support. As a result, governments, NGOs and citizen activists are developing innovative partnerships to foster plant diversity. While the U.N. *Convention on Biological Diversity* requires governments to develop policies for managing plant resources wisely, the report singles out the *World Trade Organization* for "dismantling protective measures in the name of liberalizing trade." According to Tuxill, the "bottom line" is balancing the economic benefit of plant diversity with the obligation to protect it: "Those who garner the benefits of plant diversity, such as agribusinesses and pharmaceutical consumers, should acknowledge and support those who maintain it, like indigenous cultures and national seed banks."

Meanwhile, a sort of doomsday effort to save endangered species involves the practice of cryopreservation to save organisms in an embryonic form for hundreds of years. Scientists at a National Zoo research center in Front Royal, VA, are trying to amass a collection of frozen tissue samples in hopes of reviving species that are on the brink of extinction. Proponents call cryopreservation "the future of conservation." But some critics question the practice while animal habitats are disappearing. Vicki Croke, a *Boston Globe* columnist said, "We may never be able to reproduce their culture and behavior in a petri dish... Maybe we're just playing God."

Sources: Marlise Simons, *The New York Times*, 7/27/99; WWF release, 9/9/99; *Reuters/PlanetArk*, 9/10/99; Michael Cannell, *Washington Post*, 10/10/99; David Briscoe, *AP/Nando Times*, 9/20/99; Laura Tangle, *U.S. News & World*, 11/15/99; *Worldwatch* release, 9/18/99; Alex Kirby, *BBC*, 9/20/99; and *National Journal's GREENWIRE, The Environmental News Daily*, 7/27, 9/10, 9/21, 10/12 and 11/12/99

Dead Zone Causes

A Clinton Administration report addressing the Gulf of Mexico's "dead zone" problem reportedly places most of the responsibility on farmers, who are now expected to bear the brunt of new restrictions. An area in the Gulf the size of New Jersey is void of life in large part because of farm runoff upriver on the Mississippi River, the report says. One of the most controversial recommendations is a 20% reduction in the use of nitrogen fertilizers. The runoff promotes algae growth in the gulf, consuming oxygen and choking off the marine ecosystem. The farm lobby has already criticized the recommendations as "narrowly focused science", and says its authors are biased. Farming officials say the historic channeling and diking of the Mississippi and loss of thousands of acres of Gulf Coast wetlands share the blame for the dead zone.

The Clinton Administration plans to use "a mix of carrots and sticks" to implement the recommendations. Large hog farms might be required to improve their manure control operations, but corn farmers may only be asked to plant prairie buffer strips between fields and streams. And tax incentives might be used to encourage farmers to remove land from production. Some environmentalists say this is the best way to accomplish what's needed. Scott Faber of *American Rivers* said, "We can't ask farmers to do more without giving them the financial assistance to help them do better."

Meanwhile, off the coast of North Carolina, "sewage-tainted" floodwaters created by Hurricane Floyd have created a growing "dead zone" in Pamlico Sound. The sludge containing human and animal waste is flowing from the Neuse and Tar rivers into Pamlico Sound, the nation's second-largest estuary, and from the Cape Fear River near Wilmington into the Atlantic Ocean. The runoff is "robbing" the waters of the oxygen and salinity necessary for aquatic life to survive. And scientists said the long-term effects of the runoff on the sound and the Atlantic may not be known until next spring or summer. Hans Paerl, a marine scientist at the *University of North Carolina* at Chapel Hill said, "What we're seeing is an ecological event on the catastrophic scale." Scientists are particularly concerned about the sound because its pollutants will not easily wash into the ocean. And the pollutants become more concentrated as water evaporates. Off the coast of Cape Fear, the runoff is at least 40 ft. deep and covers 300 mi.²

Sources: Peter Annin, *Newsweek*, 10/18/99; Estes Thompson, *Philadelphia Inquirer/others*, 10/9/00; and *Greenwire, A National Journal Daily Briefing*, 10/12 and 10/14/99

New Fertilizer Reduces Nutrient Loss

Bethel Farms, a leading agricultural grower in central Florida, along with *Helena Chemical Company* in Memphis, TN, has developed new temperature-release fertilizers that reduce nutrient leaching and runoff into waters along the coasts of AL, FL, GA, LA, MS, SC, and TX. The new fertilizers; made of small resin-coated prills of nitrogen, phosphorus, and potassium; release nutrients only when the soil begins to warm, when plants are most likely to absorb it, unlike conventional water-soluble fertilizers that are released upon contact with moisture. The new fertilizers are currently formulated only for soils in the southeastern U.S., but are available in there to homeowners as well as some large-scale farmers.

The small biodegradable granules or prills of nitrogen, phosphorus, and potassium are individually coated with polyolefin. The amount of coating on each prill is exactly the same, but the duration of the nutrient release depends on the ratio of the resins used to coat the prills. As soil temperatures increase, the prills begin to release nutrients; as the soils cool, the release of nutrients declines. This controlled release can last from 2 mo. to 1 yr., with little to no leaching. Due to their elastic nature, the prills are less vulnerable to mechanical wear and tear, than conventional fertilizers. This also prevents nutrient leaching, thereby reducing nutrient runoff at the edge of the field.

In one study, *Helena Chemical Company* found that temperature-release fertilizer is 4 times more efficient than liquid fertilizer and that when applied at only 25% of the liquid fertilizer rate, they supply an equal amount of nitrogen to the plant with minimal nitrate runoff. In another study conducted by the *University of Minnesota*, nitrate mobility in soils began earlier with conventional liquid fertilizer than it did with temperature-release fertilizer.

Temperature-release fertilizers are, however, slightly more expensive than water-soluble forms. Conventional brands cost between \$3 to \$4 for a 1.5 lb. bag, while *Bethel Farms*' temperature-release fertilizer costs between \$5 and \$6 for the same amount. Although this added expense may limit its use to high-value crops and certain nonagricultural sectors such as horticulture, golf courses, and gardens, Kenny Waters, a nutritional product specialist at *Helena*, contends that, "the temperature-release fertilizers use about 35% less total fertilizer by the end of the growing season than do conventional fertilizers, while increasing productivity and efficiency." In fact, *Bethel Farms*' *Bloom Grow* temperature-release fertilizer for annuals need only be reapplied every 6 mo. Its conventional competitor must be reapplied every 7 days to achieve the same results.

First developed in 1966 by the *Chisso* and *Chisso-Asahi Corporations* in Japan, the technology for the new fertilizer is based on a programmed-release fertilizer called



Meister that has been used in Japanese rice paddies for many years. The two corporations were looking for a fertilizer that would not be significantly affected by factors such as pH, soil water content, and microbial activity. Since 1966, the Japanese have developed several temperature-release fertilizers that are used with rice, soybeans, vegetables, turf grass, and trees. Currently, *Bethel Farms* offers six types of plant-specific fertilizers: *Acid Grow* for acid-loving plan such as ixoras, azaleas, camellias, and gardenias; *Bloom Grow* for all annuals; *Citrus Grow* for citrus and avocado trees; *Palm Grow* for palm trees; *Plug Grow* to establish grass plugs; and *Rose Grow* for roses and other perennials. Several other types will be available in 2000. For more information, contact Jennifer Kamberg, Advertising Coordinator, *Bethel Farms*, 8778 NW Bethel Farms Road, Arcadia, FL 34266; (800) 547-5847; fax: (941) 494-7052; email: bethelf@desoto.net; web site: www.bethelfarms.com or Kenny Waters, Nutritional Product

Specialist *Helena Chemical Company* P.O. Box 587, Brooklet, GA 30415; (912) 489-5150; fax: (912) 489-6403; email: helena@helenachemical.com; web site: www.helenachemical.com.

Source: *Nonpoint Source News Notes*, 11/99, Issue #59

Wetlands Protections Failing

U.S. Army Corps of Engineers' enforcement actions, wetland restorations and inspections have dropped dramatically, according to a comprehensive, multi-year tabulation of Corps permit and enforcement data issued in August by *Public Employees for Environmental Responsibility* (PEER). The Corps has reportedly told its districts that funding and staffing will be based solely on the issuance of development permits and has made enforcement of laws protecting the nation's wetlands its lowest priority.

Through Freedom of Information Act requests to every Corps district PEER compiled a "Corps Report Card" showing that the Corps:

- is granting more development permits than ever and denying almost none;
- is doubling its reliance on Nationwide and Regional Permits, issuing more than 60,000 in 1998, while individual permits which require environmental evaluations have fallen by more than half;
- has reduced the number of wetlands restored under Corps auspices by almost two-thirds since 1992;
- has reduced the number of permit inspections by nearly 40% nationwide; and
- has reduced the number of violators taken to court – litigation to remedy unauthorized wetland destruction nose-dived by nearly 80% between 1992 and 1998.

"The steadily increasing dependence on Nationwide and Regional Permits, 'office determinations' of Corps jurisdiction versus field visits, and most significantly, the complete disappearance of enforcement signifies that the public interest has been discarded in favor of one factor – economics," stated PEER Board member Magi Shapiro, a former longtime Corps project manager. "A program without enforcement is an invitation to break the law without consequences."

According to a recent Corps internal memorandum, titled "Workload Policy

Initiatives", released by PEER, permit violators and illegal developers can expect minimal repercussions from the Corps:

- For significant violations, where no permit exists, the Corps will either refer the matter to EPA, or "If the Corps is still lead agency at this point, the Corps will usually choose to take no enforcement action and end its involvement with the case;" and
- If the significance of the wetland destruction "cannot be determined, the Corps will normally do nothing further;"

Noting that President George Bush declared a "no net wetland loss" goal for the Corps and that President Bill Clinton has unveiled a "Clean Water Initiative" with the goal of restoring an additional 200,000 acres of wetlands, Shapiro commented that "There is a growing disconnect between our national goals and the Corps' program. The Corps is left, ultimately, with only a program facade in which staff must make complex environmental decisions based on no more than a glance at paperwork." The "Corps Report Card", nationally and for each of the 38 Corps districts (for the fiscal years 1982, 1987 and 1992-98) and related documents can be found on the web at <http://www.peer.org/corps>.

Source: *PEER Release*, 8/9/99. Contact: Amanda Carufel, (202) 265-7337

Dam Update

Atlantic salmon and striped bass have returned to the upper Kennebec River since the 162 yr. old Edwards dam was torn down this fall. The removal of the 24 ft. high, 917 ft. long dam has sparked a "rebirth" of the once-rich fishery, permitting salmon, shad, herring and other fish to reach upstream spawning grounds. It was the first hydroelectric dam in the country removed by the federal government against the owners' wishes.

In the State of Washington, *PacifiCorp* agreed to a deal on 9/22/99 among environmentalists, private industry and the federal government to demolish the Condit Dam on the White Salmon River, starting in 2006. The Condit's removal will make way for 5,000 to 10,000 fish to spawn; including the bull trout, coastal cutthroat trout and Pacific lamprey. The 125 ft. high dam, which has blocked salmon and trout from their historic breeding grounds, produces 15 MW of electricity. Portland, OR-based *PacifiCorp* agreed to contribute \$17 million

for its removal and for projects to improve the fishery. In return, the utility will be allowed to operate the dam as it is until 2006, rather than spend \$28 million on ways to help fish over the dam. Interior Secretary Bruce Babbitt called the Condit an example of a dam that has outlived its purpose. He added, "This is yet another example that river restoration is on the national agenda."

In California, federal, state and utility officials announced on 11/7/99 the largest dam removal effort in the state's history as *Pacific Gas & Electric Co.* agreed to demolish 5 dams on Battle Creek. The \$50.7 million project will restore 42 mi. of Battle Creek, a premier habitat for chinook salmon and steelhead trout. Utility officials said the dams will come down in 2001 after environmental studies. Three other dams that make up the *Battle Creek Hydroelectric Project* will remain, but will be fitted with fish ladders and screens, and will allow more water to flow downstream. As part of the CalFed program, state and federal officials will pay \$27 million in removal costs while PG&E voluntarily will give up \$20 million in lost electrical power revenue. The *David and Lucile Packard Foundation* will contribute \$3 million to the project. Interior Secretary Bruce Babbitt called the agreement a model for future environmental efforts involving government and the private sector.

On the Clark Fork River in Montana and Idaho, the *Avista Corp.* has found a "middle ground" in the controversy over dam licensing by striking a compromise with environmentalists, sports fishermen, Indian tribes, federal and state agencies. The 45-yr agreement calls for an extensive, \$225 million restoration program for fish and wildlife in exchange for relicensing of the Noxon Rapids and the Cabinet George dams. *Avista* expects approval by the Federal Energy Regulatory Commission (FERC) by early next year. FERC has encouraged "alternative licensing" to speed up the relicensing process and the collaborative effort by *Avista* is "one of the largest and most ambitious so far." About 40% of the cases now before FERC used forms of alternative licensing, and the agency has issued about five new licenses to utilities that have chosen this method.

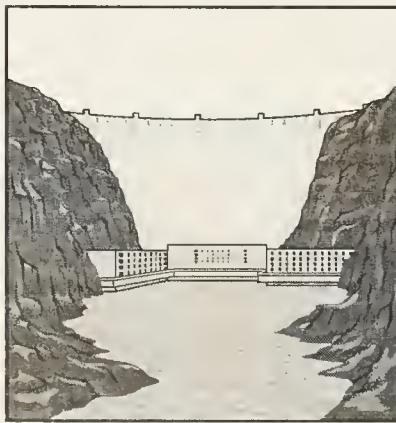
On the lower Snake River both potential winners and losers in the bid to breach dams are "busy cranking out" impact and economic studies that show mixed findings. The Bonneville Power Administration (BPA) says without the dams it would lose

11% of its total power supply, or about 1,231 MW. BPA economist Audrey Perino says it will cost about \$250 million annually to replace the power. And the agency still owes \$864 million for the dams' construction. Breaching the dams also would remove 35,000 acres of irrigated farmland, costing about \$10 million, because alternative water-delivery systems aren't cost-effective. Environmentalists concede that the breaching would cause financial stress in the near term, but that it would help in the long-term. Increased tourism from sport fishers and increased commercial fishing activity would add about \$390 million annually to the Northwest's economy, says Scott Faber of DC-based *American Rivers*. But some groups question whether salmon will even return to the river. The Portland, OR-based *Columbia River Alliance* estimates only 2,000 fish would make it back upstream, too small a number to justify the "economic pain". Meanwhile, *American Rivers* recently released a salmon mitigation report showing that federal dam managers failed to meet salmon recovery goals for water quantity and temperature in both the Snake and Columbia rivers.

Meanwhile, after recommending 7 mos. ago that breaching the four Snake River dams is the best way to restore endangered salmon populations, the National Marine Fisheries Service (NMFS) has now shifted its stance to advocate habitat restoration. In a new report called the "4H Paper," the NMFS and other federal agencies list four factors that determine salmon survival – *harvest, hatcheries, habitat and hydropower production* – and describe alternatives for saving salmon. The option with the most federal support calls for habitat restoration through the release of more water from reserves in Idaho, limiting salmon harvests to current levels for 10 yrs., expanding hatcheries, and enforcing state and local protection rules. Federal officials say the new push toward habitat restoration would likely be no less costly than the estimated \$1 billion price of dam removal. Implementation of the plan would also mean further restrictions for the timber and ranching industries, and residents of Idaho and the eastern parts of Oregon and Washington "are bracing for a fight." Idaho state representative Lenore Hardy Barrett (R) said residents would likely reject any proposal that limits grazing or mining. The agencies presented the 4H Paper to President Clinton in early November.

Then on 11/5, "In light of congressional inaction on legislation" to protect Columbia

River salmon, President Clinton ordered federal protection of 57,000 acres of land near the Hanford Reach, barring farming on the Wahluke Slope. The area is the most productive salmon run in the United States, outside of Alaska. Clinton's action nearly triples the size of the existing 30,000-acre Saddle Mountain National Wildlife Refuge. Clinton's order also transfers responsibility of the lands and salmon protection from the Energy Department to the U.S. Fish and Wildlife Service. The order is not immune to reversal because it is not congressionally-backed legislation. But Clinton officials said "even a Republican administration" would be unlikely to overturn the order because of political criticism over salmon protection. Sen. Slade Gorton (R/WA) slammed Clinton's action saying, "Any hopes of local input or management of these lands has been dashed today" But environmental groups praised Clinton's leadership.



Meanwhile in Idaho, the U.S. Bureau of Reclamation is negotiating the sale of the multimillion-dollar Island Park Dam and a network of related facilities for \$270,000 and a number of other Western dams. The sale would give a farmer-run irrigation district control of the all the water flow on the Henry's Fork stream – "the best trout stream in the country" – and tributary streams "coveted" by fishermen, boaters and conservationists. Government budget cuts have left the bureau unable to afford the 254 dams, 347 storage reservoirs, 25,000 miles of canals and pipelines and more than 37,000 miles of distribution laterals it has built in the West since 1902. At least 65 local irrigation districts have expressed interest in taking over facilities, many of which they already run under contracts with the bureau. The shift of power from the federal government to local landowners worries "those who see preservation of the status quo as one way to protect the environment." Landowners are

not allowed to harm wildlife, but, unlike the government, they are not obligated to take aggressive measures to restore a species. And while bureau officials say the transfer contract will require the irrigators to provide protections for fish and wildlife, many landowners are trying to negotiate deals directly with Congress instead.

On that front, *WaterPower: The Clean Energy Coalition* wants Congress to mandate that federal agencies balance their approach to dam licensing, weighing environmental concerns on equal footing with the economic, leisure and flood control aspects of dams. *Water Power* says Congress should act soon on reforming the way dams are licensed or risk losing the consumer and electricity benefits from their use. In the next 15 yrs., dams in 39 states will be due for relicensing, amounting to 29,000 MW of power production, more than half the U.S. federally-licensed hydropower capacity. The *Edison Electric Institute* (EEI) said reforming licensing procedures could pose a risk to the future of the hydropower industry. The trade group said that FERC has renewed licenses for more than 160 projects over the past 10 yrs. According to EEI "...two-thirds of these projects have lost generation capacity due to rigorous new operating restrictions imposed by other federal agencies." Sen. Larry Craig (R/ID) said, "I look forward to working with *WaterPower* and with all my colleagues to enact meaningful improvements to the licensing process." And *National Hydropower Association* (NHA) President Michael A. Murphy said, "We look forward to working with our new partners, the *WaterPower* coalition, to educate members of Congress and the administration on the need to preserve this nation's investment in clean, reliable, renewable power."

Paul Rogers, *San Jose Mercury News*, 11/9/99; Glen Martin, *San Francisco Chronicle*, 11/9/99; *DOI release*, 11/8/99; *API New York Times/others*, 11/7/99; Traci Watson, *USA Today*, 10/23/99; Michael Paulson, *Seattle Post-Intelligencer*, 10/23/99; Agis Salpukas, *New York Times*, 10/10/99; *White House release*, 11/5/99; Paulson/Connelly, *Seattle Post-Intelligencer*, 11/6/99; Bill Richards, *Wall Street Journal*, 10/11/99; *American Rivers release*, 10/6 and 11/5/99; Kim Murphy, *Los Angeles Times*, 10/12/99; Brinckman/Barnett, *Portland Oregonian*, 11/7/99; *Reuters/PlanetArk*, 10/14/99; *WaterPower release*, 10/13/99; *NHA release*, 10/13/99; *NAS release*, 11/5/99; *Greenwire, A National Journal Daily Briefing*, 10/12, 10/15, 11/8, and 11/9/99

Grazing Subsidies Promote Environmental Degradation

"Propped up" by more than \$100 million in federal subsidies, cattle grazing in the West is destroying native grassland, streams and some wildlife. But most Americans are not aware of the damage because "hoofprints in streams aren't as dramatic as oil spills," the *San Jose Mercury News* reports. Critics also point out that much of the benefit goes to "Roxbury ranchers" such as *Anheuser-Busch Inc.* and *Hilton Hotels*. The top 10% of permit holders control 65% of livestock on Bureau of Land Management land and 49% of livestock on national forest land. John Horning of Santa Fe-based *Forest Guardians* said, "One very small, politically powerful industry is destroying our land. ... But the salt in the wound is that we're paying them to do it."

Many environmentalists say that cattle should be removed from public lands because of damage from overgrazing. But ranchers say most of the harm was inflicted more than 50 yrs. ago and that today the industry is doing a better job of stewardship. Don Hubbs, a rancher and chairman of the *Hilton Foundation* said, "The public has been made to believe that ranchers are anti-environmental...In a few instances, maybe that's true, but in the vast majority it's not. The true ranchers know that once you desecrate the land, you don't have the production from your cattle." Hubbs advises *Hilton Hotel* chairman Barron Hilton, whose ranch "sprawls" over 450,000 acres.

Meanwhile, a 1994 Interior Department study found that while overgrazing has declined, streams still suffer severe damage from grazing. And a report by U.S. Forest Service (USFS) biologists that same year found that grazing is the main reason species are put on the endangered species list in the Southwest. But despite all that, the 9th Circuit Court of Appeals ruled on 8/24/99 that the USFS adequately considered environmental impacts before approving cattle grazing in the Prescott National Forest in northern Arizona. The decision pleased cattle ranchers, but environmentalists counter that "The court did not look at the facts. It just deferred to the agency." The environmental groups argued the USFS classified all grassland in the forest as suitable for grazing without studying the effects on the environment. But the court said the agency considered seven alternatives before issuing its management

plan, which allows grazing on 977,000 of the forest's 1.25 million acres

The bottom line is that Western lawmakers have been able to block any changes in grazing policies or increases in grazing fees because of "sympathetic" constituents and the lack of interest in the issue from most Americans. And many bankers have quietly lobbied against change because of the impact it may have on loans that use grazing permits as collateral.

Sources: Bob Egelko, *AP/San Francisco Chronicle*, 8/24/99; Rogers/LaFleur, *San Jose Mercury News*, 11/7/99; and *Greenwire, A National Journal Daily Briefing*, 8/25, 10/12 and 11/8/99

Acid Rain Concerns Linger

Environmental regulations have reduced acid rain but have not yet helped North America's damaged lakes and streams, according to a new study by the USEPA published in the journal *Nature*. The study is the first to show that reductions in sulfur dioxide emissions are directly related to reduced acidity in lakes and streams in Europe and suggests that "the payoff is probably still in the future" for the U.S., which imposed its regulations later. The study, which examined the chemical



properties of 205 lakes and streams across North America and Europe from 1980 to 1995, found that the amount of acidic sulfates entering lakes and streams has declined everywhere, but acidity only declined in Europe and one region of North America that includes eastern Maine and southern Nova Scotia.

Despite the "universal decrease" in the levels of sulfates, scientists said the lingering acidity in most of North America's lakes and streams is a sign that "the path to recovery from acid rain is not going to be as simple or as quick" as they thought. Dr. Gary Lovett, an ecosystem ecologist at the

Institute of Ecosystem Studies said, "It's sobering news that this hasn't given us the recovery that we might have hoped for. It's going to promote rethinking of our acid rain policies." The study reported that many regions in North America may not be recovering because important compounds like calcium and magnesium, which counteract the acidifying effects of sulfates, were also declining.

Despite the declining acidity in European forests (noted above), a report released on 10/7/99 by the *European Commission* and the *United Nations Economic Commission for Europe* says that Europe's forests are still deteriorating, despite measures to reduce air pollution. About 25% of the trees assessed in the survey were rated "damaged," which means they have lost more than a quarter of their leaves, and 40% were in the "warning stage." Pine forests in parts of eastern Europe have recovered gradually, but oak forests in western Europe have deteriorated in recent years. The report said, "The main causes of the vitality losses and damage are air pollution and extreme droughts." The report also found that 20% of soils in Europe are very acidic, with the greatest problem in eastern Europe. Half of the areas surveyed showed increased nitrogen deposits, particularly in western Europe, and there was an overall increase in ozone pollution. Environment ministers are debating proposals to reduce emissions of the gases that contribute to acid rain, one of the main causes of forest degradation.

Meanwhile, 7 Northeastern states (CT, ME, MA, NH, NY, RI and VT) asked the USEPA on 10/26/99 to tighten emissions regulations in order to stem the flow of pollutants from the Midwest, and other regions, blamed for contributing to acid rain in the east. The states want the EPA to craft new rules that take into account the toll that acid rain takes on natural resources such as lakes and fish.

Sources: Chris Tomlinson, *AP/Philadelphia Inquirer*, 10/7/99; Carol Kaesuk Yoon, *New York Times*, 10/7/99; *Reuters/PlanetArk*, 10/8/99; *AP/Boston Globe online*, 10/27/99; and *Greenwire, A National Journal Daily Briefing*, 10/8/99

Mountaintop Removal Decision

Mountaintop removal mining operations cannot bury streams under mine wastes and fill, a federal judge in West Virginia said on 10/20/99 in a "landmark ruling." Chief U.S.

District Judge Charles H. Haden II ruled that fills in perennial or intermittent streams violate the federal Clean Water Act and federal and state mining rules. Haden ruled that fills are legal only in "smaller" streams that only flow from rain and snow melt, and ordered the state Division of Environmental Protection (DEP) to cease issuing valley fill permits.

But just a week later, obviously under intense political pressure, Judge Haden criticized the "political" interpretations of his 49-page ruling saying that the impacts of his decision had been exaggerated and that it applies only to new permits. Haden said, "I understand that people are interested in engaging in hyperbole... I do not feel I should anticipate every criticism of what has gone on by issuing a series of clarifying orders." But Ben Bailey, lead lawyer for the DEP, said the agency will not change its interpretation of Haden's ruling. The DEP has ordered active mines to halt their valley fills. According to a 10/98 U.S. Fish and Wildlife Service report, coal operators have been permitted to bury more than 460 West Virginia streams since 1986.

Earlier (9/21/99), a U.S. Office of Surface Mining (OSM) report said that environmental regulators in Kentucky have also repeatedly granted permits for mountaintop removal mining that violated federal rules. The 1977 Surface Mining Control and Reclamation Act requires companies to provide concrete post-mining development plans before flattening hills. But 12 of 13 mountaintop removal permits reviewed by federal investigators allowed post-mining land to be used for illegal fish and wildlife habitat and recreation lands. The OSM report said further that the Kentucky Department for Surface Mining and Reclamation has allowed improper permits since May 1991. The report includes findings of incorrect fill construction procedures and the "side dumping" of coal outcrop dirt. The report said that "The result of these practices is that a greater extent of the watersheds was affected than would have been necessary."

Then on 10/13/99, the OSM issued draft guidelines stating that mountaintop removal mining permits cannot be approved unless coal operators propose post-mining land uses with increased economic or public benefits. OSM regulations require mined lands to be returned to their approximate original contour, but allow for certain exceptions such as development. In its "first formal guidance on the issue in 20 yrs.," the

OSM "stood by its demand" that coal companies can't simply propose "fish and wildlife habitat" as the future of mined land. OSM Director Kathy Karpan said there is "consensus" on residential and industrial uses, but that "there have been different interpretations of what qualifies" for agricultural and public use.

The OSM report says further that post-mining land should be used "for a broader range of activities than simply commercial agricultural uses." It discourages "low-maintenance agricultural activities such as grazing and pasture land" and says forestry should only be used if there is a "significant public or economic benefit." Presently, most post-mining sites in West Virginia are left as flat pastures with no development. The proposal would require coal operators to reclaim mined land with soil, and plant native hardwood trees and shrubs to attract wildlife. The goal is to build a biologically diverse forest and to "reverse years of deforestation in the southern part of the state" by requiring coal operators to hire foresters to develop long-term forest management plans. OSM accepted comments on the draft guidelines through 11/13/99.

Meanwhile, Haden has yet to rule on whether coal companies can fill areas in buffer zones within 100 ft. of streams. The *West Virginia Highlands Conservancy*, which filed the suit, praised Haden's earlier ruling, saying it was a "right and justifiable position." The *United Mine Workers* and *West Virginia Coal Association* did not comment. Dan Page, a spokesman for West Virginia Gov. Cecil Underwood (R) said an initial reading of the ruling suggests that it is devastating to the coal industry and the people who work in it, and it imperils the entire economy of West Virginia." A new coal industry study says a ban on mountaintop removal mining with large valley fills would reduce West Virginia's annual coal production by 10%

Earlier, West Virginia's new DEP director had been criticized for being cited numerous times for polluting streams when he was running his own mountaintop removal mine. From 1989-94, DEP Director Michael Castle owned *Big South Mining & Construction Co.*, a small coal contracting company. While his company was the operator for *Laurel Creek Mining* at an 840-acre mine in the southwestern part of the state, DEP records indicate that *Big South* paid more than \$17,000 in environmental fines for 17 violations over a 4 yr. period.

Big South's violations included 5 citations for improper sediment control and 4 for violating water pollution effluent limits. DEP records also show that the mine did not receive an approximate original contour reclamation variance required for mountaintop removal mines. However, Castle says the mine did receive the variance. Rod Blackstone, press secretary for Gov. Cecil Underwood (R) defended Castle saying, "These seem to be typical violations that happen to companies that regularly do mining in West Virginia, and their scope has not warranted Mr. Castle from being employed by federal regulatory agencies"

The impacts of Judge Haden's decision reached the halls of Congress in November when Sen. Robert C. Byrd (D/WV) and the rest of West Virginia's congressional delegation began pressuring the White House to overturn the decision in order to protect jobs and the state's economic health. Byrd also tried to block the decision by attaching a rider to a late-session funding bill. Chuck Fox, assistant administrator of the USEPA, said his agency opposed the rider, citing concerns that it would take away the agency's authority to monitor permits for strip mine valley fills.

Meanwhile, in Pennsylvania, a coalition of environmental and sportsmen groups filed a lawsuit on 10/14/99 in the U.S. District Court in Harrisburg, asking the court to enforce state and federal laws requiring coal companies to post adequate financial guarantees to clean up environmental damage caused by mining. The *Citizens for Pennsylvania's Future* says bonds currently being posted by mining companies only cover a fraction of the true cleanup costs. New rules instituted in early October require all new mine's bonds to cover the full cost of cleanup. But the environmental coalition wants that requirement to include all existing mine permits. The lawsuit names the Pennsylvania Department of Environmental Protection (PADEP) and the federal OSM as defendants. A state and federal review released this summer found that improved methods for evaluating and predicting the potential hydrologic impacts of new surface mining operations have resulted in few severe mine water discharges after reclamation. The review identified less than 3% of the 1,699 mining permits issued by the PADEP between 1987 and 1996 as having current or past post-mining discharge problems. In contrast, post-mining discharge problems were found on 17% of the mine permits issued from 1977 to 1983.

In Colorado, the debate over a proposed mine near Crested Butte, CO, is a battle "pitting the new West against the old," where industries such as mining, ranching and farming are being replaced by recreation and real estate. *Cyprus Amax Co.* wants to mine for molybdenum, used to strengthen steel, on nearby Mount Emmons. The company first proposed the idea 20 yrs. ago, but dropped its plans because of low market prices. However, recent estimates that Mount Emmons contains more than \$10 billion worth of molybdenum have renewed the company's interests. But unlike 20 yrs. ago, when it was solely environmentalists protesting the plan, local business and real estate officials have joined the opposition; with environmentalists and local ski resort developers forming an "uneasy truce" to fight the mine. Local officials fear harm will come to the recreation and tourism industry that has taken hold in Crested Butte since the last mine closed 30 yrs. ago; and developers say a nearby mine could cause soaring property values to decline

Ken Ward Jr., *Charleston [WV] Gazette*, 7/23, 8/11, 9/22, 10/13, 10/14, 10/21, 10/28, 11/8; *OSM release*, 10/13/99; Don Hopey, *Pittsburgh Post-Gazette*, 8/10 and 10/14/99; Jim Carlton, *Wall Street Journal*, 8/17/99; *Greenwire Weekly Executive Summary*, 10/18-22/99; and *Greenwire, A National Journal Daily Briefing*, 7/27, 8/10, 8/17, 9/22, 10/13, 10/14, 10/15, 10/28, 11/8/99

Miscellaneous River Issues

Iowa Fish Restitution - Money collected from fish restitution in Iowa will now be used for environmental improvements on or as close as possible to the streams where fish kills occur. The program specifies that the funds will be targeted to the counties where fish kills occur, with the streams sustaining fish kills getting the highest priority for improvements. Streams within the watershed of the impacted stream will receive the next highest priority, followed by other county streams. The change in policy was made possible through an agreement between the Department of Natural Resources (DNR) and the Division of Soil Conservation (DSC) in the Iowa Department of Agriculture and Land Stewardship. Money will be made available to the county Soil and Water Conservation Districts, and to jump start the program, more than \$110,000 from the *Iowa Fish and Wildlife Trust Fund* (representing the amount of fish restitution money collected last year) is already being made available to the DSC

this year for use in 11 counties. Eligible stream improvement practices for which the money can be used include stream bank stabilization, riparian wetland development, fencing livestock from streams, sediment basins, buffer strip establishment, animal waste management systems and in-stream fish habitat structures. Until now, money collected for fish restitution went directly into the *Fish and Wildlife Trust Fund*, but was not specifically earmarked for use on streams where fish kills occurred. "This is a program we honestly wish we never had to use because we would prefer to have no fish kills at all," said DNR Director Paul Johnson. But Johnson said using fish restitution money in the streams that are actually affected by pollution is a common sense approach. "This program will not only seek to improve water quality where problems have happened, but also try to put structures in to prevent more damage from occurring in the future," Johnson said. The program will also avoid providing significant economic benefits to parties responsible for causing a fish kill. For example, money could not be used to help a responsible party establish buffer strips and then receive Conservation Reserve Program (CRP) payments as well. Source: Iowa DNR, Des Moines

Virginia Coal Waste Spill - Federal Judge James P. Jones ordered a Lee County, VA, coal company on 11/1/99 to pay \$85,000 in fines and \$1.5 million in restitution for violating the federal Clean Water Act. *Lone Mountain Processing Inc.* pleaded guilty to two "massive" coal-waste spills that blackened waterways and killed more than 11,000 fish. Sources: Rex Bowman, *Richmond Times-Dispatch*, 11/2/99; and *Greenwire, A National Journal Daily Briefing*, 11/2/99

Economics of Missouri River Navigation - Commercial shipping on the Missouri River provides little economic benefit to the region and doesn't lower rail shipping rates, according to a report released on 11/17/99 by two agricultural economists – one from Nebraska and one from Kansas. The report, commissioned by the *Environmental Defense Fund* (EDF) is based on a review of existing studies as well as a technical workshop conducted on the issue in Omaha last spring. Dale Anderson, professor emeritus of agricultural economics at the *University of Nebraska-Lincoln*, said the Missouri River is too narrow, too shallow and has too short a shipping season to be an important grain-shipping route such as the

Mississippi River. "The costs vs benefits just don't add up in favor of the Missouri being either a major carrier of products up or downstream", he said, "nor do we think it's likely to change significantly in the future." The report by Anderson and Michael Babcock, an economics professor at *Kansas State University*, challenges long-held claims that competition from barge traffic on the Missouri River holds down railroad freight rates in the region. Navigators, barge terminal operators and farmers have argued that the river must be maintained to support barge navigation in order to maintain that edge. Tim Searchinger, an EDF attorney, said the Anderson and Babcock report confirms a 1998 report by Philip Baumel, an *Iowa State University* agricultural economist, that also challenged the importance of barge shipping on the Missouri. EDF also commissioned the Baumel report. Source: Julie Anderson, *Omaha World-Herald*, 11/18/99

Biodegradable Plastic - A new biodegradable plastic made primarily from soy protein could be "an environmentalist's dream." The plastic, developed by researcher Jay-Lin Jane at *Iowa State University*, is "strong enough to hold a *Big Mac* and environmentally friendly enough for U.S. Navy cooks to throw overboard." Tests have shown that the plastic breaks down in the soil within 10-14 days and will dissolve in sea water, which could help the Navy cut down on the pollution it generates. Illinois-based *Soy Works Corp.*, which owns the marketing rights to the invention, is developing the plastic for the consumer market. *Soy Works* President Roy Taylor said it could replace as much as 5% of the plastics market and could have "wide-ranging implications for bulging landfills and cash-strapped grain farmers." Taylor said the plastic could be introduced to the public in the form of fast-food clamshell containers, spoons and golf tees by the end of 2000. But he said the toughest sell will be to manufacturers. Taylor said, "Yes, the product may cost them more at first, but they will be paying for a healthy environment." Sources: April Goodwin, *Des Moines Register*, 9/20/99; and *National Journal's GREENWIRE, The Environmental News Daily*, 9/21/99

Canada Water Rights - Although it has 20% of the world's fresh water supply, Canada is not likely to share it. Nothing, it seems, stirs Canada's nationalistic passions more than the prospect of exporting its precious national fluid. U.S. companies have long tried to purchase Canadian water, often invoking NAFTA, but Canadian

officials say water is not a trade-related matter, but rather an environmental one. The government plans to pass legislation this fall that would ban bulk water removal from territorial waters. A joint U.S.-Canada commission endorsed such a ban on 8/18/ 99. But as the Ottawa government tries to get the provinces in line, "water-rich" Newfoundland could be "the first test of Canadian hydro-nationalism." A local entrepreneur wants to fill a supertanker every 2 wks. with 130 million gallons of lake water. But Tom Osborne of the Newfoundland provincial legislature "predicts that in the coming era of global warming, Canada could become the Saudi Arabia of H O." Osborne said, "Water is the commodity² of the next century, and those who possess it and control it could be in a position to control the world's economy." Sources: Steven Pearlstein, *Washington Post*, 9/19 and 8/22/99; and *National Journal's GREENWIRE, The Environmental News Daily*, 8/23/99

Judgement on EPA Punitive Action - In a ruling that could affect USEPA enforcement actions nationwide, a federal appeals court has ruled that the agency cannot seek penalties against a company for violating hazardous waste laws if state regulators have already taken enforcement action. The ruling by a three-judge panel of the 8th U.S. Circuit Court of Appeals in St. Louis is the first federal court ruling on the EPA's enforcement jurisdiction in states that have the authority to enforce the Resource Conservation and Recovery Act. *Harmon Industries*, a Blue Springs, MO-based railroad safety equipment manufacturer, reported in 1987 that its employees had dumped hazardous chemicals behind the company's plant. The Missouri Department of Natural Resources agreed not to impose penalties, partly as a reward for voluntarily reporting the violations. But the EPA said in 1991 it "had grown impatient" waiting for state enforcement and fined the company \$2.7 million for dumping toxic solvents on the ground from 1973 to 1987. *Harmon* fought the penalty in court, saying the EPA did not have the authority to levy a fine because it had delegated authority to enforce the federal hazardous-waste law to Missouri officials. *Harmon* attorney Robert Payne said on 9/20/99 that the ruling was a "well-reasoned resolution to the question." But Justice Department spokeswoman Cristine Romano said, "The EPA is concerned that this ruling will have a negative impact on the federal enforcement program. It creates doubt whether EPA can assist states in enforcing hazardous-waste cases." And Ken

Midkiff of the *Sierra Club* in Missouri said he was concerned "because of the weak enforcement decisions and settlements by the state." Some lawyers following the case speculated that the ruling could affect the way the EPA enforces federal clean air and clean water laws as well. Sources: Michael Mansur, *Kansas City Star*, 9/21/99 and *Greenwire Weekly Executive Summary*, 9/20-24/99

Virginia Wetlands - Nineteen Virginia environmental groups are calling on Gov. James S. Gilmore III (R) to limit wetlands destruction, saying a 1998 federal appeals court ruling has allowed builders to "rapidly drain" wetlands. The court ruled that developers need a permit for filling wetlands but not for draining them. The groups, including the *Chesapeake Bay Foundation*, the *Southern Environmental Law Center* and the *James River Association*, said that since the ruling, Virginia "is fast becoming the number one state in the nation in acres of wetlands drained." They say protecting wetlands is "critical" for protecting waterways, wildlife habitat and groundwater supplies. Attorney General Mark L. Earley issued an opinion in October saying current law does not allow the state to limit the draining. The action is a response to a recommendation by an advisory panel appointed by Gilmore, which says nearly half of Virginia's 1.8 million acres of wetlands have been destroyed by development, farming and natural forces over the last two centuries. The *Citizens Wetlands Advisory Committee* called on the state to spend as much as \$134 million over the next 10 yrs. to protect 20,500 acres of wetlands. Sources: Rex Springston, *Richmond Times-Dispatch*, 10/31/99; *Washington Post*, 10/31/99; and *Greenwire, A National Journal Daily Briefing*, 11/1/99

Montana Environmental Ruling - Business groups "voiced alarm" on 10/27/ 99 over a recent Montana Supreme Court ruling that the state cannot allow activities that could damage the environment. About 50 representatives from Montana business interests gathered for a *Western Environmental Trade Association* meeting to ask state Department of Environmental Quality (DEQ) Director Mark Simonich and lead attorney John North how the ruling will affect their businesses. Tom Daubert, a Helena industry consultant said, "It seems, on its face, nothing can happen unless it's been determined it doesn't violate the right to a clean and healthful environment." Simonich said the DEQ is still examining the ruling, but he believes it could lead to

more litigation over environmental permits, and opponents to projects could use it to block business activities. However, Simonich said he does not expect the ruling to require state regulators to re-examine permits already issued. Simonich said the DEQ may seek guidance from the 2001 legislature on enforcement of the ruling. The Montana Supreme Court ruled on 10/20/99 that the state's residents have a constitutional right to a clean and healthful environment. In the first-ever decision dealing with the state constitution's right to a "clean and healthful environment," the court said the provision protects not only real damages, but also anticipated pollution. Justice Terry N. Trieweiler, writing for the court said, "Our constitution does not require that dead fish float on the surface of our state's rivers and streams before its farsighted environmental protections can be invoked." Sources: Erin P. Billings, *Billings Gazette*, 10/21 and 10/28/99; and *Greenwire, A National Journal Daily Briefing*, 10/28/99

Minnesota Refinery Fined - Koch Petroleum Group will pay \$8 million and plead guilty to violating environmental rules for discharging oil and wastewater at its Rosemont, MN, refinery in the mid-1990s, company and federal officials said on 10/28/ 99. The company will pay \$2 million to the Dakota County park system and \$6 million in criminal fines – the largest federal environmental fine in Minnesota history. And Koch said it has reached a tentative settlement with the USEPA to pay a \$3.5 million civil penalty. Between 200,000 and 600,000 gallons of fuel leaked into the ground in 1997, some into a wetland near the Mississippi River. The federal government alleges that Koch failed to notify the Minnesota Pollution Control Agency (MPCA) in a timely manner after it discovered the leaks. Two company whistle blowers brought the pollution to light by informing the MPCA. Koch Executive Vice President Mark Wolff said, "We take full responsibility for our mistakes and regret that these problems ever occurred. We are committed to preventing them in the future and are confident we can." Sources: Dennis Lien, *St. Paul Pioneer-Press*, 10/29/99; and *Greenwire Weekly Executive Summary*, 9/27-10/9/99

Irrigation Ditch Screens - The House unanimously passed a bill on 11/9/99 authorizing \$25 million a year to keep endangered salmon and other fish out of farmers' irrigation systems in CA, OR, WA.

ID and MT. Under the bill, sponsored by Reps. Peter DeFazio (D/OR) and Greg Walden (R/OR), the federal government would pay 65% of the cost of screens that local officials would voluntarily build along streams. Farmers and the local officials would pay the other 35%. Walden said irrigation districts must build the diversion systems to comply with the Endangered Species Act. He called the bill a "win-win" proposal for the fish and the farmers." The bill authorizes funds from 2001 until 2005. Sources: *AP/Seattle Daily*, 11/10/99; *Journal of Commerce*, 11/10/99; and *Greenwire, A National Journal Daily Briefing*, 11/10/99

LA/TX Spill Crackdown - The USEPA has told 11 refineries and chemical plants in Louisiana and Texas to reduce high releases of hazardous materials that occur through accidental spills. Of the thousands of plants in the EPA's Region VI, which includes AR, LA, NM, OK and TX, the 11 facilities account for half of the releases from accidental spills. When dangerous releases of hazardous materials into the air, water or soil are accidental, the plant is not in violation of its permit. Jerry Clifford, EPA Region VI deputy administrator said, "A facility can be operating in complete compliance with its permits, but the excess emissions during these upsets could still be creating a problem at the local level." Environmental groups say the government should not exempt plants for accidental releases of harmful chemicals. Four groups issued a report in early November saying that Norco, LA-based *Shell Chemical Co.* should compensate neighbors of the plant for spills by paying to relocate them. Clifford is urging the plants to exchange technology and ideas on ways to limit the occurrence of accidental spills. Sources: John M. Biers, *New Orleans Times-Picayune*, 11/6/99; and *Greenwire, A National Journal Daily Briefing*, 11/8/99

Timber Sale Ban - A federal judge in Illinois has issued a ban on all timber sales that were approved without environmental analysis and public input during the past year. The injunction, issued in early October by U.S. District Judge J. Phil Gilbert, would block logging on more than 110,000 acres of national forests. Gilbert ruled that the U.S. Forest Service (USFS) threatened the environment through its use of the "categorical exclusion," a loophole that exempts timber sales of less than 1 million board ft. from public or environmental review. Indiana-based forest watchdog group *Heartwood* sued the USFS, saying the

agency used the loophole to bypass the National Environmental Policy Act. Environmentalists said the USFS used the 1992 rule to "avoid costly and time-consuming environmental studies." Kim Davitt of Montana-based *American Wildlands* said the law has allowed "a number of egregious timber sales," including some in fragile ecosystems and areas inhabited by grizzly bears and endangered fish and birds. USFS spokesman Pete Pierce said the agency has not decided how it will respond to the injunction but has stopped work in the affected areas. He "said he was not aware of any instances in which foresters deliberately ignored [environmental] circumstances to process a timber sale." The ruling may force the USFS to conduct environmental reviews on all land exempted by the loophole since 9/16/98. It is expected to affect numerous sales nationwide, although USFS officials in the Northwest say it is not likely to have "major impacts" there because most sales in Washington and Oregon endure "at least an environmental assessment." Sources: *Salt Lake Tribune*, 10/7/99; Michael Pearson, *AP/Cleveland Plain Dealer online/others*, 10/7/99; *Portland Oregonian*, 10/6/99; and *Greenwire Weekly Executive Summary*, 10/4-8/99

Potomac River Fishway - A \$2 million fishway being installed into the Potomac River's Little Falls Dam will allow shad to reach upstream spawning grounds. A "fish ladder" was added to the 1,400 ft. dam after its construction in 1959, but the shad refused to climb the "lousy" ladder, and their populations declined. But fishery biologists and river hydraulics experts say the new passageway, a 24 ft. notch in the dam that will slow the water flowing through it, "should work." The federal government is paying 75% of project cost, and Maryland is paying the rest. Environmentalists and recreational fishers are pleased with the expected return of the shad. Several other migratory species, including the rockfish and river herring, will also benefit from the fishway. Sources: David Montgomery, *Washington Post*, 10/12/99; and *Greenwire, A National Journal Daily Briefing*, 10/12/99

Property Rights Judgement - "In a significant environmental ruling," a federal appeals court has ruled that a Florida developer is not entitled to compensation because of environmental regulations that affected the value of his property. The U.S. Court of Appeals for the Federal Circuit in

Washington, DC, ruled that Lloyd A. Good Jr. knew at the time of his purchase of land on Sugarloaf Key, FL, that the property would be subject to federal and state environmental protections. In 1990, Good refused to accept conditions for developing the property as laid out by the U.S. Army Corps of Engineers and sued the federal government for a taking under the Fifth Amendment. Senior Judge Edward S. Smith wrote in a court opinion that Good "lacked a reasonable, investment-backed expectation that he would obtain the regulatory approval needed to develop the property," and that "defeats his takings claim as a matter of law." Lois Schiffer, assistant attorney general for the Department of Justice's Environment and Natural Resources Division, said, "The ruling ensures that courts considering takings claims in the future will take a hard look at the reasonableness of a developer's plans in light of federal, state and local environmental protection standards." Good's attorney, Richard R. Nageotte, said the decision "wipes out the property rights guaranteed by the Constitution." He said, "Unless you got the property from the King of England you probably can never prove a reasonable investment". Sources: *Justice Department release*, 9/2/99; H. Josef Hebert, *AP/Miami Herald/others*, 9/4/99; and *National Journal's GREENWIRE, The Environmental News Daily*, 9/7/99

Nature's Boundaries - Drivers in New Jersey are learning exactly what watershed they are traveling through thanks to new watershed awareness signs unveiled this past June by the New Jersey Dept. of Environmental Protection (DEP) and New Jersey Dept. of Transportation (DOT). The



they are entering. DEP plans to place these educational watershed signs at all the boundaries of New Jersey's 20 watershed management areas; more than 100 should be

in place by the end of the year. Through the signs and other educational efforts, DEP is fostering a better understanding about the importance of protecting water through watershed management and providing a sense of stewardship and ownership among the public. DOT Commissioner James Weinstein said that the signs are a "new symbol of cooperation" between the two departments. DEP Commissioner Robert C. Shinn, Jr. added that "it may appear DOT and DEP are on different roads, but you find the roads are in the same watershed."

Ninety-six individual watersheds and 566 municipalities existing in New Jersey are criss-crossed by some 36,000 miles of paved roads. "Watersheds are nature's boundaries. It is our responsibility as the people of New Jersey to care for and protect our clean drinking water," Shinn said. For more information about New Jersey's Watershed Awareness Sign Program and Public Relations Campaign, contact Colleen Gould, New Jersey DEP Division of Watershed Management, 31 Waldron Road, Allentown, NJ 08501, (609) 633-1179; email: cgould@dep.state.nj.us. Source: *Nonpoint Sources News Notes*, 11/99, Issue #59

Rio Grande Minnow Recovery -

Biologists say emergency action is needed to keep the Rio Grande silvery minnow from becoming extinct because populations took a "nosedive" this year. Though biologists have known the silvery minnow was disappearing from upstream areas, this year's dramatic decline caught them by surprise. They will consider collecting minnows and moving them upstream, building fish ladders and, as a last resort, building a minnow hatchery to keep the species alive. Compounding problems is the survey's finding that the minnow population is concentrated near the headwaters of the Elephant Butte Reservoir, where the fish are "particularly vulnerable." The minnow was once one of the most abundant fish species on the Rio Grande, but was listed as endangered in 1994. It is one of 9 native fish species still left in the 170-mile stretch of the river between Cochiti Dam and Elephant Butte. Ten other fish species have either gone extinct or are no longer found in that part of the Rio Grande. Sources: Mike Taucher, *Albuquerque Journal*, 11/11/99; and *Greenwire, A National Journal Daily Briefing*, 11/12/99

Subsidy Problems - An end to government subsidies to farming, fishing and energy

industries could improve efforts to protect the environment, according to a *World Trade Organization* report released on 10/11/99. In the U.S., the *Environmental Defense Fund* (EDF) said that the 60-year old federal crop insurance program is contributing to water pollution by encouraging farming on millions of acres of the most flood-prone land. Meanwhile, Congress is working on a major expansion of the program. The House recently passed a \$3 billion plan without a dissenting vote, and only the "stubborn opposition" of Senate Agriculture Chairman Richard Lugar (R/IN) has kept it from becoming law. Supporters say the federal program does not go far enough because it currently excludes livestock and "specialty crops" such as fruits and vegetables. And its 35% deductible is too high, so farmers in repeatedly hard-hit areas are often unhappy with their reimbursements. But the cheap insurance promotes overproduction of farm land, which contributes to soil erosion and sends pesticides and fertilizers into rivers, environmentalists say. Tim Searchinger an EDF attorney said, "You can't really call it insurance when the government practically gives it away, and now these bills would make it even cheaper. They would use taxpayer money to wipe out habitats the size of Virginia." Some state officials are also concerned with the program. Minnesota says the insurance contradicts the federal Conservation Reserve Program, which is supposed to help them buy up to 100,000 acres of environmentally sensitive farmland to restore wetlands. Kevin Lines of the Minnesota Department of Natural Resources said, "People say, shoot, I can get my insurance for almost nothing. I might as well farm every square inch I've got." Farmers say that until crop prices rebound, they have no choice but to till every acre so they can compensate with volume. Sources: Michael Grunwald, *Washington Post*, 11/7/99; and *Greenwire, A National Journal Daily Briefing*, 10/12 and 11/8/99

Climate Change

Tropical marine environments are likely to be the first casualties of climate change, according to a report by Australian researcher, Ove Hoegh-Guldberg of *Sydney University*. Hoegh-Guldberg found that most of the world's coral reefs "are doomed to perish" because of global warming. He predicted that reefs in the Central Pacific area may last until 2050, but reefs around the West Indies in the Caribbean "look as though they will be gone by 2020."

Global sea temperatures last year were the warmest in at least 1,000 yrs., according to a worldwide study of 300 reefs. The *Reef Check* study predicted that sea temperatures could increase by another 2° in the next 50 yrs. The report discovered that some corals, which were about 1,000 yrs. old, died as a result of coral bleaching. Some scientists believe this is caused by the warming of sea temperatures related to the El Nino phenomenon. The reefs studied by *Reef Check* also show lower population counts of lobsters, humphead wrasse, groupers and giant clams than in 1997. Plant cells in coral are unable to cope with rising water temperatures. Once they begin to falter, the entire coral system loses its central core and fish that live there eventually starve.

Australian *Greenpeace* spokesman Irwin Jackson said, "Coral reefs are now in effect the canaries in the cage, warning the world that something must be done to limit carbon emissions and slow down global warming." John Tanzer of the *Great Barrier Reef Marine Authority* said, "If we don't care about the Great Barrier Reef, we don't care about our future."

Biologists say that pollution and warming temperatures are also putting marine life at a growing risk from a range of diseases. Writing in the journal *Science*, the scientists blame El Nino for not only affecting world climate, but also for helping established diseases find new species to attack. Lead author Drew Harvell of *Cornell University* said, "The combined effects of rising temperatures, human activity and pollution are producing a volatile mix that may threaten tropical corals and temperate species alike." And a study published in the British weekly *New Scientist* found a plant virus trapped in glacial ice cores drilled from sites in Greenland. The entrapment of viruses in ice could mean that under conditions of melt-off, they "may be continually or intermittently released into the modern environment."

According to another study in the journal *Science*, oscillating currents deep in the ocean act as a "global conveyor belt" and may be responsible for the earth's 1,500-year cold cycles. The study, led by Wallace S. Broecker, a marine geochemist at *Columbia University's Lamont-Doherty Earth Observatory*, offers a possible new explanation to what Richard Alley, a climate expert at *Pennsylvania State University*, called "a fundamental beat to the climate." Determining this beat is crucial to answering the question of whether global warming is caused by natural changes or

human-induced changes in the atmosphere like greenhouse gases. Broecker theorized that changes in the salt content of the ocean's surface drive the deep ocean current, which transports large amounts of heat around the world. No clear-cut link between the conveyor's oscillations and the 1,500-yr. recurrences of cold spells has been established, but Broecker said there is an obvious relationship between the conveyor's behavior and the last ice age, a trend that he says could have continued. Alley said, "We've been pretty lucky, the climate hasn't varied much in 8,000 years. But could the big changes come back?"

According to a study outlined in the journal *Nature*, global warming could, "paradoxically, trigger a global freeze and do it in a matter of decades." Scientists have known for years that North American glaciers melted about 8,200 yrs. ago and flooded the Earth with cold, fresh water. But until now they could not link that event to an ensuing period of atmospheric cooling that occurred for hundreds of years after the melting. In the latest study, the researchers examined evidence of a massive flood in the Hudson Bay region of Quebec and Ontario. Radioactive dating of clams in the flood sediment proved the link between the glacial melt and the temperature drop. If the Greenland Ice Sheet were to melt in the next century because of global warming, the scientists say a similar effect could result.

New computer models that combine historic patterns of the sun and human impact on the climate also suggest the planet could slip into an ice age, a *Cambridge University* physicist said on 8/10/99. Nigel Weiss told the *UK National Astronomy Meeting* that there is a risk of "catastrophic change" that is more likely to be a tilt into a sudden ice age than a runaway greenhouse effect." Weiss said geological records show that even small changes in solar activity could trigger a backlash, such as the change in ocean circulation mentioned earlier. Weiss said, "If you take a very complicated and unstable system and push it in one direction, it may flip back in the other direction." If this were to happen, Weiss adds, the gulf stream would no longer transport warm water across the Atlantic Ocean to Europe.

Jeffery P. Severinghaus of the *Scripps Institution of Oceanography* agrees. His study published in the September issue of the journal *Science* found that the earth's climate is subject to sudden change under the right conditions. Severinghaus found a new method of analyzing gases trapped in

Greenland's ice showing the air temperatures warmed rapidly at the end of the last ice age about 15,000 yrs. ago. Severinghaus said the study detected a 16° warming within "just a couple of decades." He said the study "certainly gives us pause," adding that "there is a remote possibility that we might trigger one of these abrupt climate changes." Pieter P. Tans of the National Oceanographic and Atmospheric Administration called the study's findings "surprising" and added that scientific caution demands "another piece of evidence to support it."

Australian oceanographers have conducted the world's "most comprehensive" study of rainfall over the oceans and found it had increased by 8% causing vast areas of the Earth's oceans to lose their salinity as global warming increases rainfall over the Southern Ocean and South Pacific. The research team from the *Antarctic Cooperative Research Center* and the *Commonwealth Scientific and Industrial Research Organization's*



marine research division compared ocean records taken since 1930 with current records. The team concluded that deep

waters in the Indian Ocean, Pacific Ocean and Tasman Sea had become fresher. The findings are consistent with the predictions of global warming computer models, said Nathan Bindoff, a senior oceanographer at the *Antarctic Research Center* at the *University of Tasmania*. But he said the increase in rainfall over the Southern Ocean was about three times greater than predicted. Bindoff said he did not expect any long-term detrimental effects on marine life. The findings are also published in the journal *Nature*.

Global warming will also likely trigger more rainfall in the Pacific Northwest, according to findings by a federally sponsored research group. Philip Mote and his collaborators in the *Northwest Climate Impacts Group* are expected to predict changes in salmon runs, forests, water resources and the coastline of the Northwest during the next 50 yrs. The research team, sponsored in part by the National Oceanic and Atmospheric Administration, is

studying regional impacts of global warming. At a presentation to a Washington state Senate committee last spring, the team predicted warmer, wetter winters, flooded wetlands and shrinking forests.

In a new global warming twist, research by USGS scientist John Bratton suggests that climate change could trigger a "dramatic fall" in sea levels. Published in the journal *Geology*, Bratton's report says that with global warming, sea levels will drop because warmer temperatures cause "clathrates," crystals on the sea floor made of ice and gases, to melt. Bratton says the release of methane and other gases trapped in the crystals could cause the sea level to drop as much as 82 ft. And this could offset the sea level rises predicted for low-lying areas of the world. Bratton said, "Almost everyone agrees that hydrates melt when climate warms. The debate is now about whether hydrates may actually drive natural climate warming or whether they just go along for the ride." Although his research suggests "good news" for threatened coastal regions, Bratton warned that the release of methane, a greenhouse gas, could have a "significant effect" in driving further climate change.

On 8/1/99 VP Al Gore released a set of declassified satellite images of the Arctic Ocean that will help scientists study climate change. The images will be used by scientists participating in SHEBA, an international expedition that has documented changes in the Arctic ice pack "consistent with those expected as a result of global warming". Preliminary findings from SHEBA show that the Arctic ice sheet is roughly 5% smaller and one meter thinner than in the 1970s. Gore said, "No place on Earth is more sensitive to global warming than the Arctic, and these satellite images will provide scientists with valuable data for understanding how climate change affects this complex region." Gore criticized Congress for failing to fund programs that he said would save energy and reduce greenhouse gas emissions.

Meanwhile, the "ozone hole" that forms over Antarctica between August and October each year has reappeared and is nearly as large as ever. Observations made with the *Total Ozone Mapping Satellite* (TOMS) show that the area of depleted ozone in the upper atmosphere has reached about 10 million mi.² That makes the hole larger than the U.S., Canada and Mexico combined. Historically, the worst ozone

depletion has occurred at the poles, although it has also occurred above populated areas allowing more of the sun's harmful radiation to reach the earth's surface. An American team of 11 researchers left for Antarctica in September to join teams from 15 other countries who will use the "icy continent" to study climate change. The *International Trans-Antarctic Scientific Expedition*, which is funded by the *National Science Foundation's Office of Polar Programs*, will study hundreds of years of weather patterns to try to predict hurricanes, El Ninos and temperatures. The study is estimated to cost between \$1-\$2 million/yr. Antarctica (like the Arctic regions) is of particular interest to environmentalists because of the possibility that some of its massive ice cap, which contains about 90% of the world's ice, could melt from global warming. Scientists do not expect this to happen "anytime soon," but there is evidence that global warming is causing glaciers to retreat.

According to a study published in the 10/8/99 issue of the journal *Science*, the West Antarctic ice sheet is melting, but not because of "human-induced" global warming. A team of scientists led by Howard Conway of the *University of Washington* (UW) said the ice sheet's future "may have been predetermined" 10,000 yrs. ago when the boundary between floating ice and ice that reaches the ocean floor began retreating. Conway said, "Collapse appears to be part of an ongoing natural cycle, probably caused by rising sea levels initiated by the melting of the Northern Hemisphere ice sheets at the end of the last ice age". The ice of West Antarctica has receded about 800 mi. during the past 7,000 to 8,000 yrs., and the edge of the ice sheet is shrinking at a rate of 400 ft./yr., according to Conway and colleagues at UW and the *University of Maine*. Two other scientific teams also published reports in *Science* with evidence of a "long-term meltdown" of the West Antarctic ice sheet. Robert Ackert Jr. of the *Massachusetts Institute of Technology* and his colleagues identified how much thicker the ice sheet was 10,000 yrs. ago by studying changes on the surface of a volcano. Conway said most of the melting appears to have taken place during periods of stable climate. Conway said, "What our findings indicate is that it might keep melting no matter what we do about global warming". But the report points out that global warming caused by humans could speed up the thawing process. The researchers' calculated that the Western Antarctic ice sheet could completely collapse in the next 7,000 yrs. Conway

said, "Certainly warming up the ocean ...could help the ice sheet retreat more quickly."

Meanwhile, glaciers in the Himalayas also seem to be melting faster, another possible indication of global warming. The result could be devastating for human populations that depend on glacial runoff, experts say. The Himalayan glaciers, which constitute the largest ice field in the world apart from the two polar caps, feed the Indus and Ganges rivers, which carry water to 500 million people in northern India. Crops, drinking water, and village life would be "turned upside down" if the rivers don't flow. A study by the *International Commission for Snow and Ice* says the glaciers in the Himalayas are receding faster than any others in the world and could disappear by 2035. Scientists say there would be an initial period of flooding, which could lead to mud slides. But once the lakes are emptied, rivers would shrink. But some scientists disagree over the actual cause of the melting and what role, if any, greenhouse gases play. Skeptics say it's too early to judge, pointing to the fact that glaciers are always changing shapes and sizes.

Sulfur emitted in the exhaust of large ships may account for almost half of the total amount of sulfur entering the atmosphere, causing a "significant effect on climate" by promoting cloud formation, according to a study published in an August issue of the journal *Nature*. A team led by Spyros Pandis of *Carnegie Mellon University* said the discovery will force "a reevaluation of our present understanding of sulfur cycling and radiative forcing over the ocean." Sulfur emissions were already known to play a large role in the formation of clouds, which help regulate heat exchange in the atmosphere. But the researchers said shipping emissions seem to account for about 14% of the atmospheric effect of all sulfates from human activities. Shipping emissions can also exacerbate acid rain, the researchers said, because about 70% of ocean-going ship emissions occur within 250 miles of land.

Oceans and other carbon "sinks" may not be as effective as previously thought in absorbing carbon dioxide emissions released into the atmosphere, according to a study published the 7/23/99 issue of the journal *Science*. The study, conducted by scientists from the *Woods Hole Research Center* in Massachusetts, refutes the findings of a 1998 study that suggested

trees, plants and soil in North America absorbed as much carbon dioxide as the region emitted. Researchers examined the pattern of land-use change in the U.S. from 1700 to 1945 and found that practices such as deforestation and fossil-fuel burning put about 27 million tons of carbon into the air. But since 1945, cropland abandonment, fire suppression efforts and forest growth have pulled out only about 2 billion tons from the air. During the 1980s, changes in land management practices offset only 10-30% of U.S. fossil fuel emissions.

Meanwhile, Bethesda, MD-based *Lockheed Martin* "is planning a massive bombing campaign to combat the threat of global warming" by dropping tree saplings embedded in aerodynamic cones into deforested landscapes. *Lockheed Martin* will convert C-130 aircraft to conduct the bombing raids. Newton, MA-based *Aerial Forestation Inc.* is promoting the plan and hopes to reforest parts of Scotland, Germany's Black Forest and Egypt's Sinai desert.

And finally, *Pricewaterhouse Coopers* and *EcoSecurities Ltd.* have formed a partnership to develop products and services related to climate change and greenhouse gas emissions. Because of the 1997 Kyoto Protocol requiring developed countries to limit emissions to specific levels, *Pricewaterhouse* and *EcoSecurities* anticipate "explosive growth" in the need for advisory services. The companies together will focus on providing financial advice such as the impact of emissions caps on corporations.

Sources: *AP/New York Times*, 7/22/99; *Alex V. Pal, Philippine Daily Inquirer*, 9/7/99; *Newsweek online*, 9/4-6/99; *William K. Stevens, New York Times*, 11/9/99; *BBC online*, 8/18 and 9/2/99; *Penny Fannin, Melbourne Age*, 7/30/99; *Tom Paulson, Seattle Post-Intelligencer*, 10/8 and 11/9/99; *Clive Cookson, Financial Times*, 8/11/99; *Paul Pecer, AP/Philadelphia Inquirer/ others*, 10/29/99; *Damian Carrington, BBC News online*, 10/7/99; *White House release*, 8/2/99; *Alex Kirby, BBC Online*, 8/18/99; *Mike Recht, AP/Boston Globe online*, 10/25/99; *David Whitehouse, BBC*, 9/22/99; *Malcolm W. Browne, New York Times*, 10/26/99; *Washington Post*, 7/26/99; *Timothy Burn, Washington Times*, 9/4/99; *Reuters/ PlanetArk*, 9/8/99; and *Greenwire, A National Journal Daily Briefing*, 5/11, 7/22, 7/26, 8/2, 8/3, 8/11, 8/18, 8/20, 9/7, 9/8, 9/24, 10/14, 10/26, 10/29, 11/5 and 11/9/99

Open Access to Science

A law passed last October to make all government-funded scientific research available to the public has "delighted" the *U.S. Chamber of Commerce* because it allows companies to better scrutinize data that prompts policy makers to issue regulations. According to the *Chamber* Web site: "In the regulatory reform arena there may never be a more important issue. ... This would be the first time the business community has ever been provided with the basis for the bureaucracy imposing \$700 billion in annual regulatory costs on us." But "alarmed" scientists fear the law could increase "clashes between science and industry."

Critics say Sen. Richard Shelby (R/AL) proposed the amendment to last year's budget bill after *Harvard University* researchers refused to give Congress the results of a two-decade-long pollution study that later prompted a 1997 federal regulation requiring stronger controls on sources of small particle emissions. Kevin Casey, *Harvard's* senior director of federal and state regulations, "called the Shelby amendment a back-door attack on regulations like the emissions rule." He said it will enable Republicans to attack

environmental legislation and company lawyers to "harass scientists collecting data" on environmental issues.

But "industry is not uniformly in favor" of the law, fearing it might jeopardize university-industry agreements. The amendment is currently being formulated into regulations by the Office of Management and Budget and will go into effect late this year.

Sources: Philip J. Hilts, *New York Times*, 7/31/99; and *National Journal's GREENWIRE, The Environmental News Daily*, 3/1 and 8/2/99

Science For Sale

"Money, it turns out, can buy scholars as well as politicians," writes David Callahan in a *Washington Monthly* commentary on how large corporations use conservative policy groups. Corporate money has helped fuel the "explosive" growth of state-based conservative think tanks, such as the *Independent Institute*, over the last 10 yrs. For example, some corporations have invested heavily in policy groups that support their campaigns against the 1997 Kyoto global warming treaty. The

Competitive Enterprise Institute, which has lobbied for the idea that global warming is a "theory not a fact," has seen its budget grow from less than \$1 million in 1991 to more than \$4 million.

And the corporations often get a "return on their investment." Donating money to think tanks helps "buy respect" for companies,

legitimize their viewpoints and spread their message to the public. Think tanks can also advocate views that are not yet accepted in mainstream politics. And the "price tag

for this policy work can't be beat" because corporate donations to think tanks are tax-deductible. Callahan said, "There is an urgent need for better counterweights to the corporate propaganda machines that call themselves public policy research organizations."

Sources: David Callahan, *Washington Monthly*, 11/99 issue; *Greenwire, A National Journal Daily Briefing*, 11/12/99

Meetings of Interest

Feb. 3-5: National Whirling Disease Symposium, Coeur d'Alene Resort, ID. Contact: Whirling Disease Foundation, (406) 585-0860

Feb. 8-10: International Conference on Risk Analysis in Aquatic Animal Health, Office International des Epizooties, Paris, France. Contact: K. Sugiura, 011/33-0144-151888. k.sugiura@oie.int

Mar 20-23: UMRCC/LMRCC Joint 2000 Meeting, Holiday Inn, Cape Girardeau, MO. Contact: Gordon Farabee, MO. Dept. of Conservation, (573) 751-4115 or farab@mail.conservation.state.mo.us; or Ted Crowell, KY Dept. Fish & Wildlife Resources, (502) 564-3596 or Ted.crowell@mail.state.ky.us

Mar. 24-28: North American Wildlife and Natural Resources Conference, Hyatt Regency O'Hare, Chicago, IL Contact: Richard McCabe, (202) 371-1808

Apr. 4-6: International Hazardous

Material Spills Conference, Regal Riverfront Hotel, St. Louis, MO. Contact: <http://www.nrt.org/hazmat2000>

May 2-6: AQUA 2000, "Responsible Aquaculture in the New Millennium", Acropolis Convention Centre, Nice, France. Contact: John Cooksey, worldaqua@aol.com

May 21-24: Missouri River Management: It's Everybody's Business, Radisson Inn, Bismarck, ND. Contact: Roger Collins, (701) 250-4492, roger_collins@fws.gov, <http://infolink.cr.usgs.gov/events/00.htm>

July 17-21: EISORS (Eight Internat'l. Symposium on the Ecology of Regulated Rivers) - River Restoration, Toulouse, France. Contact: CESAC/CNRS, 29, rue Jeanne Marvig, 31055 Toulouse Cedex 04, France, Phone: 33-5 62 26 99 60, FAX: 33-5 62 26 99 99, www.cesac.chemes.fr/~eisors

July 23-26: International Congress on the

Biology of Fish, Aberdeen, Scotland.

Contact: Don D. MacKinlay, Fisheries & Oceans Canada, (604) 666-3520, FAX (604) 666-6894, e-Mail: MACKINLAYD@PAC.DFO-MPO.GC.CA or <http://www.fishbiologycongress.org>

Aug. 20-24: 130th Annual Meeting of the American Fisheries Society, Adam's Mark Hotel, St. Louis, MO. Contact: Betsy Fritz, (301) 897-8616, ext. 212; bsfritz@fisheries.org

Aug. 20: MICRA Paddlefish/Sturgeon Committee Meeting, Adam's Mark Hotel, St. Louis, MO (held in conjunction with the 130th AFS Mtg.). Contact Kim Graham, MO Dept. of Conservation, (573) 882-9880, FAX (573) 882-4517, email: grahal@mail.conservation.state.mo.us

Aug. 21-24: Black Bass 2000 Symposium, Adam's Mark Hotel, St. Louis, MO (held in conjunction with the 130th AFS Mtg.). Contact: David Philipp, philipp@uiuc.edu or Mark Ridgway, ridgwama@pogov.on.ca

Endangered Species Act Amendments

H.R. 3160: D. Young R/AK and 31 cosponsors. Reauthorizes and amends the Endangered Species Act of 1973.

H.R. 3407: J. Saxton R/NJ. Assists in the conservation of keystone species throughout the world.

Environment

S. 352: State and Local Government Participation Act of 1999, C. Thomas, R/WY and H.R. 2029: G. Radanovich, R/CA. Amends the National Environmental Policy Act (NEPA) of 1969 requiring Federal agencies to consult with State, county, and local agencies and governments on environmental impact statements.

S. 481: Environmental Crimes and Enforcement Act of 1999, C.E. Schumer, D/NY. Provides for protection of government employees and the public from environmental crimes.

S. 1066: P. Roberts, R/KS. Amends the National Agricultural Research, Extension, and Teaching Policy Act of 1977 to encourage use of and research into agricultural best practices to improve the environment, and for other purposes.

S. 1090: J. Chafee, R/RI and H.R. 2956: F. Pallone D/NJ and 30 co-sponsors. Reauthorizes and amends the Comprehensive Environmental Response, Liability, and Compensation Act of 1980.

S. 1279: R. Kerrey, D/NE. Improves environmental quality, public use and appreciation of the Missouri River and provides additional authority to the Army Corps of Engineers to protect, enhance, and restore Missouri River fish and wildlife habitat.

S. 1426, T. Harkin (R/IA), T. Daschle (D/SD), P. Leahy (D/VT), R. Kerrey (D/NE), K. Conrad (D/ND), and T. Johnson (D/SD) : Amends the Food Security Act of 1985 to promote the conservation of soil and related resources, and for other purposes.

S. 1622: B. Lincoln (D/AR), B. Frist (R/TN), M. Landrieu (D/LA), T. Hutchinson (R/AR), J. Breaux (D/LA), and R. Durbin (D/IL). Provides economic planning, and coordination assistance for the development

of the lower Mississippi River region.

H.R. 408: C. Peterson, D/MN. Amends the Food Security Act of 1985 to expand the number of acres authorized for inclusion in the Conservation Reserve Program (CRP).

H.R. 525: Defense of the Environment Act of 1999, H.A. Waxman, D/CA. Requires any Congressional provision that reduces environmental protection to: (1) identify and describe the provision, (2) assess the extent of the reduction, (3) describe actions taken to avoid the reduction, and (4) recognize any statement of the Comptroller General in assessing the reduction.

H.R. 728: K. Lucas, D/KY. Amends the Watershed Protection and Flood Prevention Act providing cost share assistance for rehabilitation of structural measures constructed as part of water resource projects previously funded by the Secretary of Agriculture.

H.R. 1836: D. Bereuter, R/NE. Balances the wind and water erosion criteria and wildlife suitability criteria for the 18th CRP signup.

H.R. 3448: J. Greenwood R/PA, C. Dooley D/CA, S. Boehlert R/NY, and E. Tauscher D/CA. Improves management of environmental information and encourages innovation in the pursuit of enhanced environmental quality

Fish and Wildlife

S. 1653: J. Chafee R/RI and 12 co-sponsors. Reauthorizes and amends the National Fish and Wildlife Foundation Establishment Act.

Hydropower

S. 740: L. Craig, R/ID and E. Towns, D/NY. Amends the Federal Power Act to improve hydroelectric licensing processes by granting the FERC statutory authority to better coordinate participation of other agencies and entities, and for other purposes.

Population Growth

H. Con. Res 17: Population Growth Resolution T.C. Sawyer, D/OH. Expresses the sense of Congress that the U.S. should develop, promote, and implement, at the

earliest possible time and by voluntary means consistent with human rights and individual conscience, the policies necessary to slow U.S. population growth.

Property Rights

S. 333: P. Leahy, D/VT, H.R. 598: R. Santorum, R/PA, and H.R. 1950: S. Farr, D/CA. Amends the Federal Agriculture Improvement and Reform Act of 1996 to improve the farmland protection program.

S. 1028: O. Hatch, R/UT. Simplifies and expedites access to Federal courts for parties whose rights and privileges, secured by the Constitution, have been deprived by actions of Federal agencies, entities or officials acting under color of State law.

S. 1202: B.N. Campbell, R/CO. Requires a warrant of consent before land inspections may be carried out to enforce any law administered by the Secretary of the Interior

H.R. 1002: Declaration of Taking Act,, D. Hunter, R/CA. Amends the subject act to require that all government condemnations of property proceed under that Act.

H.R. 1142: D. Young, R/AK. Ensures that landowners receive equal treatment to the government when property must be used.

H.R. 2550: T. DeLAY (R/TX). Compensates owners of private property for the effect of certain regulatory restrictions.

Public Lands

S. 338: B.N. Campbell, R/CO; S. 568: C. Thomas, R/WY and H.R. 154: J. Hefley, R/C. Establish fee systems for commercial filming activities on public lands.

S. 446: B. Boxer, D/CA. Provides for permanent protection of U.S. resources in the year 2000 and beyond.

S. 510: B.N. Campbell, R/CO and H.R. 883: D. Young, R/AK. Preserves U.S. sovereignty over public and acquired lands, and preserves state sovereignty and private property rights in non-federal lands surrounding public and acquired lands.

S. 532: D. Feinstein, D/CA and H.R. 1118: T. Campbell, R/CA. Increases funding to resume state grant funding for the Land and Water Conservation Fund and development

of conservation and recreation facilities in urban areas under the Recreation Recovery Programs.

S. 826: C. Thomas, R/WY. Limits federal acquisition of lands located in States where 25% or more of the land in the State is owned by the U.S.

S. 1049: F. Murkowski, R/AK, and H.R. 1985: B. Cubin, R/WY. Improves administration of oil and gas leases on Federal lands, and for other purposes.

H.R. 488: Northern Rockies Ecosystem Protection Act of 1999, C. Shays R/CT. Special designation of lands in the states of ID, MT, OR, WA, and WY.

H.R. 1199. R.W. Pombo, R/CA. Prohibits expenditure of Land and Water Conservation Funds for new National Wildlife Refuges without Congressional authorization.

H.R. 1207: B.F. Vento, D/MN. Prohibits the U.S. government from entering into agreements related to public lands without Congressional approval.

H.R. 1284: Minnesota Valley Refuge Bill, D. Young, R/AK. Protects the Minnesota Valley National Wildlife Refuge and protected species to ensure that scarce refuge land in and around the Minneapolis, MN metro area are not subjected to physical and auditory impairment.

H. R. 1396: C. McKinney, D/GA. Saves taxpayers money, reduces the deficit, cuts corporate welfare, and protects and restores America's natural heritage by eliminating the fiscally wasteful and ecologically destructive commercial logging program on Federal public lands, and facilitates the economic recovery and diversification of communities dependent on the Federal logging program.

H.R. 1500: J. Hansen, R/UT. Accelerates the wilderness designation process by establishing a timetable for completion of wilderness studies on Federal lands.

H.R. 2222: G. Miller, D/CA. Establishes fair market value pricing of Federal natural assets, and for other purposes;

H.R. 3245: D. Young R/AK and G. Miller D/CA. Establishes a fund to meet the outdoor conservation and recreation needs of the American people; provide Outer Continental Shelf impact assistance to State

and local governments; amend the Land and Water Conservation Fund Act of 1965, the Urban Park and Recreation Recovery Act of 1978, and the Act popularly known as the Federal Aid in Wildlife Restoration Act.

Regulations

S. 746: Regulatory Improvement Act of 1999, S.M. Leven, D/MI. Improves the ability of Federal agencies to use scientific and economic analyses to assess cost-benefits and risk assessments of regulatory programs.

H.R. 1864: J. Hansen, R/UT. Standardizes public hearing processes for Federal agencies within the Dept. of the Interior.

H.R. 1866: J. Hansen, R/UT. Provides a process for the public to appeal certain decisions made by the National Park Service and the U.S. Fish & Wildlife Service.



Tennessee Valley Authority

S. 123: TVA Funding Act, R.D. Feingold D/WI. Phases out Federal funding for the Tennessee Valley Authority.

Water Resources

S. 294: R. Wyden, D/OR. Directs the Secretary of the Army to develop and implement a comprehensive program for fish screens and passage devices.

S. 685: M. Crapo, R/ID and H.R. 2456. M. Simpson, R/ID. Preserves state authority over water within their boundaries and delegates states the authority of Congress to regulate water.

S. 1659: C. Burns R/MT and H.R. 2974: R. Hill R/MT. Conveys the Lower Yellowstone Irrigation Project, the Savage Unit of the Pick-Sloan Missouri Basin Program, and the Intake Irrigation Project to the appurtenant irrigation districts.

S. 1762: P. Coverdell R/GA and B. Lincoln AR. Amends the Watershed Protection and Flood Prevention Act authorizing the Secretary of Agriculture to provide cost share assistance for the rehabilitation of structural measures constructed as part of water resources projects previously funded by the Secretary under such Act or related laws.

H. Con. Res. 86: E. Blumenauer (D/OR). Concurrent resolution expressing the sense of Congress regarding Federal decisions, actions, and regulations affecting water.

H.R. 1444: P. DeFazio, D/OR. Authorizes the Secretary of the Army to develop and implement projects for fish screens, fish passage devices, and other similar measures to mitigate adverse impacts of irrigation system water diversions in the states of OR, WA, MT and ID.

H.R. 2984: B. Barrett R/NE. Directs the Secretary of the Interior to convey to the Loup Basin Reclamation District, the Sargent River Irrigation District, and the Farwell Irrigation District, NE, property comprising the assets of the Middle Loup Division of the Missouri River Basin Project, NE.

H.R. 3002: D. Young R/AK. Provides for the continued preparation of certain useful reports concerning public lands, Native Americans, fisheries, wildlife, insular areas, and other natural resources-related matters, and to repeal provisions of law regarding terminated reporting requirements concerning such matters.

Water Quality

S. 20: Brownfield Remediation and Environmental Cleanup, F.R. Lautenberg D/NJ. Directs EPA to establish a grant program for States and local governments to inventory and conduct site assessments of brownfield sites. Defines brownfield sites as facilities suspected of having environmental contamination that could limit their timely use and can be readily analyzed.

S. 188: R. Wyden, D/OR. Amends the Federal Water Pollution Control Act (FWPCA) to authorize use of the revolving loan funds for construction of water conservation and quality improvements.

S. 493: P. Sarbanes, D/MD. Requires the U.S. Army, Corps of Engineers to conduct pilot projects on toxic microorganisms in tidal and non-tidal waters.

S. 669: P. Coverdell, R/GA. Amends the FWPCA to ensure compliance by Federal facilities with pollution control requirements.

S. 914: B. Smith, R/NH and H.R. 828: J. Barcia, D/MI. Amends the FWPCA requiring discharges from combined storm and sanitary sewers to conform to the *Combined Sewer Overflow Control Policy* of the USEPA.

S. 968: B. Graham, D/FL. Authorizes USEPA to make grants to States for water source development to maximize the supply of water and protect the environment through development of alternative water sources, and for other purposes.

S. 1787: M. Baucus D/MT, B.N. Campbell R/CO, and T. Daschle D/SD. Amends the FWPCA to improve water quality on abandoned or inactive mined land.

H.R. 155: Municipal Biological Monitoring Use Act, J. Hefley, R/CO. Amends the Clean Water Act.

H.R. 684: Farm Sustainability and Animal Feedlot Enforcement Act, G. Miller, D/CA. Amends the Clean Water Act.

H.R. 1290: W.B. Jones, R/NC. Amends the FWPCA related to wetlands mitigation banking.

H.R. 1549: P. Visclosky, D/IN. Amends the FWPCA to establish a National Clean Water Trust Fund to carry out projects to restore and recover U.S. waters from damages resulting from FWPCA violations.

H.R. 1578: J. Hostettler, R/IN. Amends the wetland conservation provisions of the Food Security Act of 1985 and the FWPCA to permit unimpeded use of privately owned crop, range, and pasture lands that have

been used for the planting of crops or the grazing of livestock in at least 5 of the preceding 10 years.

H.R. 1712: B. Stupak, D/MI. Amends FWPCA to authorize an estrogenic substances screening program.

H.R. 2328: J. Sweeney, R/NY. Amends the FWPCA to reauthorize the Clean Lakes Program.

H.R. 2449: C. Norwood, R/CA. Amends the FWPCA relating to Federal facilities pollution control.

H.R. 2957: D. Vitter R/LA and W. Jefferson D/LA. Amends the FWPCA to authorize funding to carry out certain water quality restoration projects for Lake Pontchartrain Basin, LA.

Source: Congressional Affairs Update, USFWS, 6/2, 6/25, 7/23, 9/25, 10/1, 10/8, 10/22, 10/29, 11/12 and 11/19/99



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